

LAND USE AND DEVELOPMENT PLAN
FOR
TOWN OF MANTEO,
NORTH CAROLINA

1986 - UPDATE

MARCH, 1987

HD
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L364
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HD 211.N8 L364 1987

1986 LAND USE PLAN UPDATE

TOWN OF MANTEO

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This plan was adopted by the Manteo Board of Commissioners after Public Hearing on March 4, 1987, and certified by the North Carolina Coastal Resources Commission on March 27, 1987.

Prepared by

DEAN MOSS AND ASSOCIATES

TOWN OF MANTEO, NORTH CAROLINA

LAND USE AND DEVELOPMENT PLAN

1986 UPDATE

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TOWN OF MANTEO, NORTH CAROLINA

Land Use and Development Plan

1986 UPDATE

I. INTRODUCTION

The purpose of this planning document is to provide an update to the Manteo Land Use Plan prepared and adopted by the Town in 1981. The 1981 Plan was prepared as part of the general preparation for the 400th Anniversary celebration of the First Roanoke Colonies and focused much of its attention on the special needs of Manteo in preparing for that Celebration. A discussion of that plan and of the extent to which its recommendations have been implemented is included as Appendix A to this document.

This plan builds upon the foundation layed down by the 1981 Plan. In addition to addressing new requirements set forth by the Coastal Resources Commission, it looks at several issues which are of special concern to the Town, including downtown parking, annexation policy and utility line replacement.

The Plan addresses only the existing incorporated area of Manteo. At the time of this writing, the Town is discussing the potential expansion of the Town limits and, if such an expansion were to occur, a more detailed plan may need to be done for the new area. Dare County will be funded by CAMA to update its Plan during 1986/87 and the most rational policy would be to address an update for any new areas of Manteo at this time.

This Plan is organized to follow the State Planning Guidelines contained in 15 NCAC 07B.0100 etseq. This Introduction is followed by a discussion of Existing Conditions. Future Conditions including future demand for utilities are projected and this is followed by a discussion of Manteo's Objectives and the Policies selected to achieve them. This section includes a subsection on Storm Hazard Mitigation and Storm Damage Response. The final section of the Plan is on Land Classification and the relationship of the policies to that classification scheme. A Bibliography and various Appendices are included at the end.

An open and straight forward planning process was followed in the development of this plan. Background papers and reports were prepared for review by Town officials and others and the plan was prepared based on this preliminary work. A draft plan document was presented to the Town in June 1986 and after slight modifications, a draft plan was forwarded to the State at the end of August.

During the development of this plan, regular meetings and discussions were held with the Manteo Planning Board, the Board of Town Commissioners, and other officials and residents of the Town. All meetings of the Board where the Plan would be discussed were announced beforehand. An information sheet prepared to explain the Plan to citizens is included as Appendix B. A questionnaire was distributed, via the water bill mailing list to most residents and businesses in Manteo and although the response was slim, a reasonable cross section of opinion was obtained. A memo to the Board discusses the results of the questionnaire and is included as Appendix C.

There are several special plans done for the Town since 1980 which this Plan references and utilizes. It is recommended that these be re-examined by the Boards and that they be implemented as appropriate.

They include:

- 1) Traffic Operations and Parking Study (DOT - 1981)
- 2) Stormwater Management (McDowell-Jones, 1982)
- 3) Guide for Development (NCSU 1981)
- 4) Urban Forestry Report (NRCD 1980)
- 5) Dare County Emergency Response Plan (1983)

Planning, to be successful, must be an ongoing process of constant questioning and answering. The Manteo Planning Board should be consulted on all major issues affecting the Town's future and when necessary, professional assistance (on a project by project basis) should be employed.

II. EXISTING CONDITIONS

The Town of Manteo, incorporated in 1899, is the County Seat of Dare County. The Town was named after Manteo, an Indian friend of the first Colonists and the first Protestant baptized in the New World, on August 13, 1587.

The Town sits at the north central end of Roanoke Island, and the downtown waterfront area borders Doughs Creek and Shallowbag Bay. Figures 1 and 2 show the location of the Town in the context of North Carolina and in the context of Central Roanoke Island.

By highway the Town is approximately 200 miles from Raleigh, the State Capitol and 120 miles from the Norfolk-Hampton Roads, Virginia area.

Roanoke Island is about ten miles long and varies in width from one to three miles. Elevations in the Manteo area range from sea level upwards to 12 feet above MSL. The area is characterized by mild winters and hot, moist summers. Because of its proximity to the ocean, prevailing weather conditions are similar to those on the coast.

A. POPULATION AND ECONOMIC ACTIVITY

This section describes the current population and economic conditions in the planning area. The source of most of the information is the 1980 Census and therefore some conditions may have changed since the information was collected. This is not considered a major problem, for despite the increasing pace of economic development, the increase in permanent population has not been large.

Manteo, N.C.

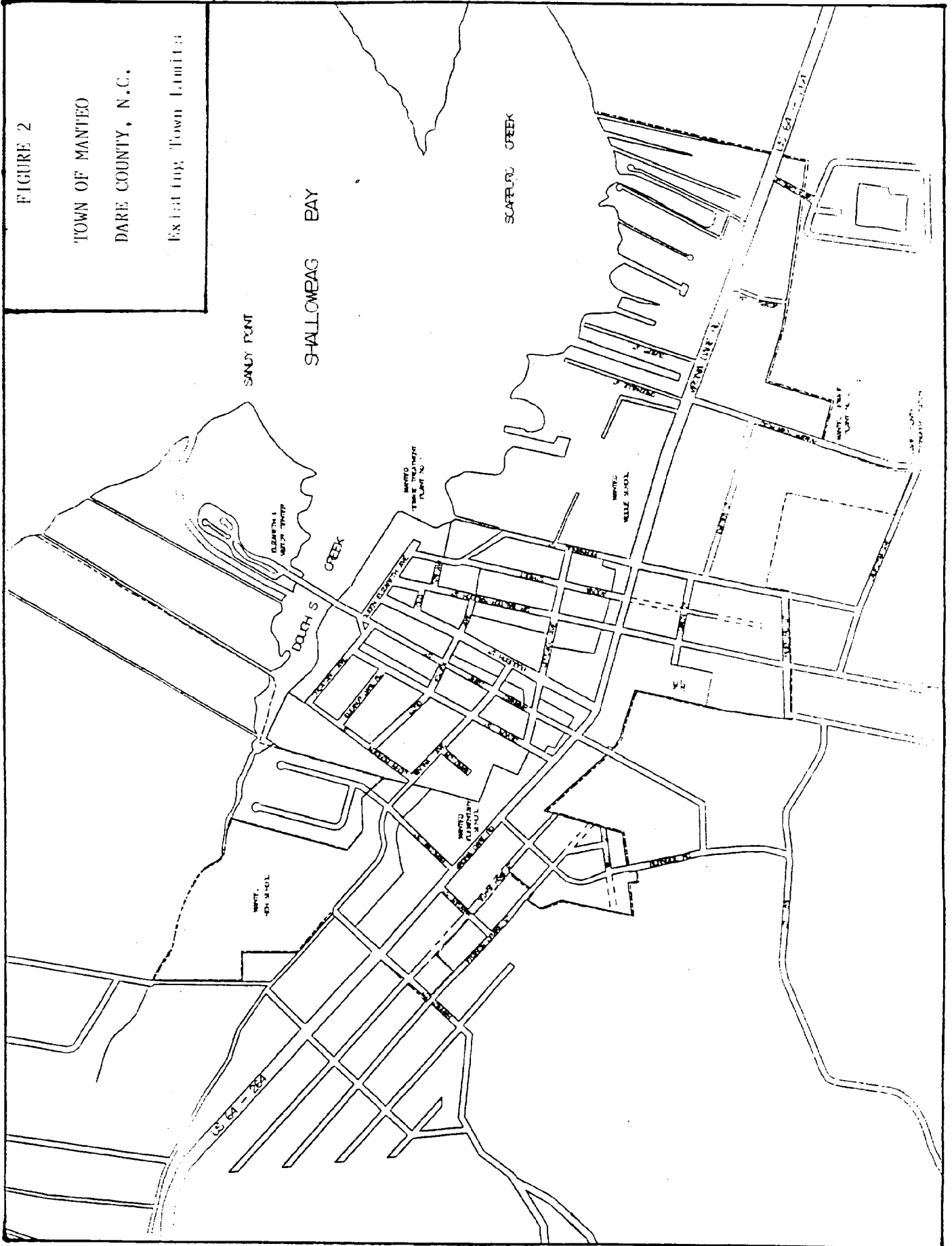
FIGURE 1

NORTH CAROLINA

Showing Project Location

FIGURE 2

TOWN OF MANTEO
DARE COUNTY, N.C.
Existing Town Limits



1. Historic and Current Permanent Population:

Manteo's population slowly decreased from 1950 to 1970 and then increased substantially in 1978-79 as a result of a major annexation. Table 1 shows the historic population of Manteo and Dare County from 1950 to 1980 and indicates the percentage of the County's population residing in Manteo.

TABLE 1
POPULATION OF MANTEO AND DARE COUNTY
1950 - 1985

Year	Dare County	Manteo	Manteo %
1950 ¹	5,405	635	11.8
1960 ¹	5,935	587	9.9
1970 ¹	6,995	547	7.8
1980 ¹	13,377	902 (489) ³	6.7 (3.6) ³
1985 ²	17,000	1,000	5.8

1 Source: U. S. Census Reports

2 1985 population is estimated based on an extrapolation of State 1984 estimates.

3 Numbers in parentheses show population of original Manteo area.

Table 1 indicates that while Dare County is growing very rapidly, Manteo's growth has been much slower. This is understandable given that the vast majority of the County's growth has occurred on the beaches. It is important to note however that since 1980, based on State of North Carolina estimates (extrapolated to 1985) Manteo has grown by about 10%. This shows a clear reversal of the trend from 1950 to 1970 where the Town has slowly lost population. Most of this growth is occurring in the areas which were annexed in the late 1970s.

TABLE 2

VISITATION TO DARE COUNTY AND MANTEO AREA

By Year 1980 - 1985

<u>Point of Interest</u>	<u>1980¹</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
Cape Hatteras Nat. Seashore	1,693,283	1,863,488	1,931,177	1,948,105	1,438,089	1,263,837	1,638,705
Jockey's Ridge State Park	NA	NA	NA	294,200	274,822	304,250	329,026
Wright Bros. Memorial	431,005	431,790	417,544	486,479	411,677	450,837	632,969
Elizabeth II Hist. Site ²	NA	NA	NA	62,378	134,846	136,632	109,497
Fort Raleigh Nat. Mon.	354,063	302,752	303,953	363,361	391,915	275,419	261,870
N. C. Aquarium	229,448	236,971	252,682	315,194	299,873	336,030	343,450
<u>Traffic Counts</u>							
Alligator River Bridge	NA	537,110	544,510	581,810	615,170	553,370	621,731
Currituck Sound Bridge	NA	1,955,970	1,816,575	2,058,570	2,626,960	2,748,620	3,280,682

Notes: Source: Dare County Chamber of Commerce

1 1980 Figures from source agencies.

2 Elizabeth II figures from Chamber of Commerce differ from State figures. State figures for 1983, 1984, and 1985 are 60,777, 127,560 and 138,690 respectively. 1986 figures are highly subject because of counting problems.

2. Temporary and Visitor Populations:

Table 2 shows visitation at key features in Dare County and shows traffic across the two entrance bridges from 1981 to 1985. Traffic across the Currituck Sound Bridge is about 5 times greater than traffic across the Alligator River Bridge. This means generally that about 83% of the people visiting Dare County have no reason to visit Manteo except to see the various attractions on Roanoke Island.

There are currently 170 motel and guest rooms in Manteo and 30 camp sites. There are an additional 500 campsites at the north end of Roanoke Island. This is in comparison to 4,443 motel rooms and 2,819 campsites for the county as a whole. The county as a whole also contains 7,950 rental cottages, 297 rental cottage units, 750 condominiums and 650 timeshare units.¹ Manteo has a few rental houses and apartments and several new condominiums.

There are several key points which flow from this information and which may be important for future planning.

- ° The number of visitors and temporary residents in Manteo are very small when compared to the rest of the County.
- ° Most visitors to Manteo apparently come across from Nags Head to visit the tourist attractions and then return.
- ° The proportion of Dare County visitors from North Carolina -- and that means those who will pass through Manteo on their way to the Beach -- is relatively small when compared to those from other states.

¹Source: Dare County Chamber of Commerce, 10-85.

3. Current Economic Base

Manteo's current economic base is a mixture of the old and the new. Since well before its incorporation in 1899 Manteo has been the county seat of Dare County and an important fishing and commercial center. Fishing has declined in importance as the fleet and processing activities have shifted to Wanchese but there are still fishing activities centered in Manteo. Governmental activities have continued to be important but the prominence of Manteo as the commercial center of the County has declined as the population center has shifted to the beach and as commercial centers have been developed there. Business, personal, and professional services have also tended to follow the population to the beach, but significantly, several of the service firms and organizations also maintain offices in Manteo. Because the resident visitor population of Manteo is a small percentage of the permanent population (at least when compared to other Dare County communities) there appears to be a slightly greater economic stability in Manteo than in other communities. Put simply, people in Manteo may not make as much money as in other communities in the county but at the same time, most businesses in Manteo don't close down in the winter.

Despite Manteo's slightly lower reliance on tourism it is, however, the major component of the retail economy. Most people from North Carolina who come to the Outer Banks pass through Manteo to get there, and many of them stop in Manteo both to view the historic sites and to stock up on supplies before going out on to the beaches.

B. LAND USE

The land use patterns of a community reflect the past and present actions which people have taken to live on the land. Manteo is no exception. The development pattern of the Town, particularly of Old Manteo, still shows the historic focus that the town had on the waterfront. As the economic orientation of the town has shifted to serving the auto-borne tourist passing through on Highway 64-264, the land use patterns are shifting as well. This section describes the current land use (Jan 1986) and discussed areas where land use change and conflicts may occur.

1. Description of Existing Land Use:

As mentioned above, Manteo's land use reflects its historic and current economic orientation and role in the community. Figure 3 (pg. II-9) shows the distribution of the major land use types across the community.

Manteo is primarily a residential community, and residential land uses occur in all parts of the town and even along Rt. 64-264. The major single family residential concentrations are in the older part of Town both north and south of the commercial core, west of 64-264 in the Fernando/Sir Walter Raleigh street area and in the Roanoke Park area. There is some multi-family housing in the older part of town, most notably along Budleigh Street, now in the newer development on the waterfront. The major multi-family concentrations however, are in the two developments (Harbortown and Baytree) located near the old water plant, in the condomonium development along the water front, and most recently in the newly developed area (Croatan Townhomes) between the new sewage treatment plant and the new Sawyer Ford facility.

FIGURE 3

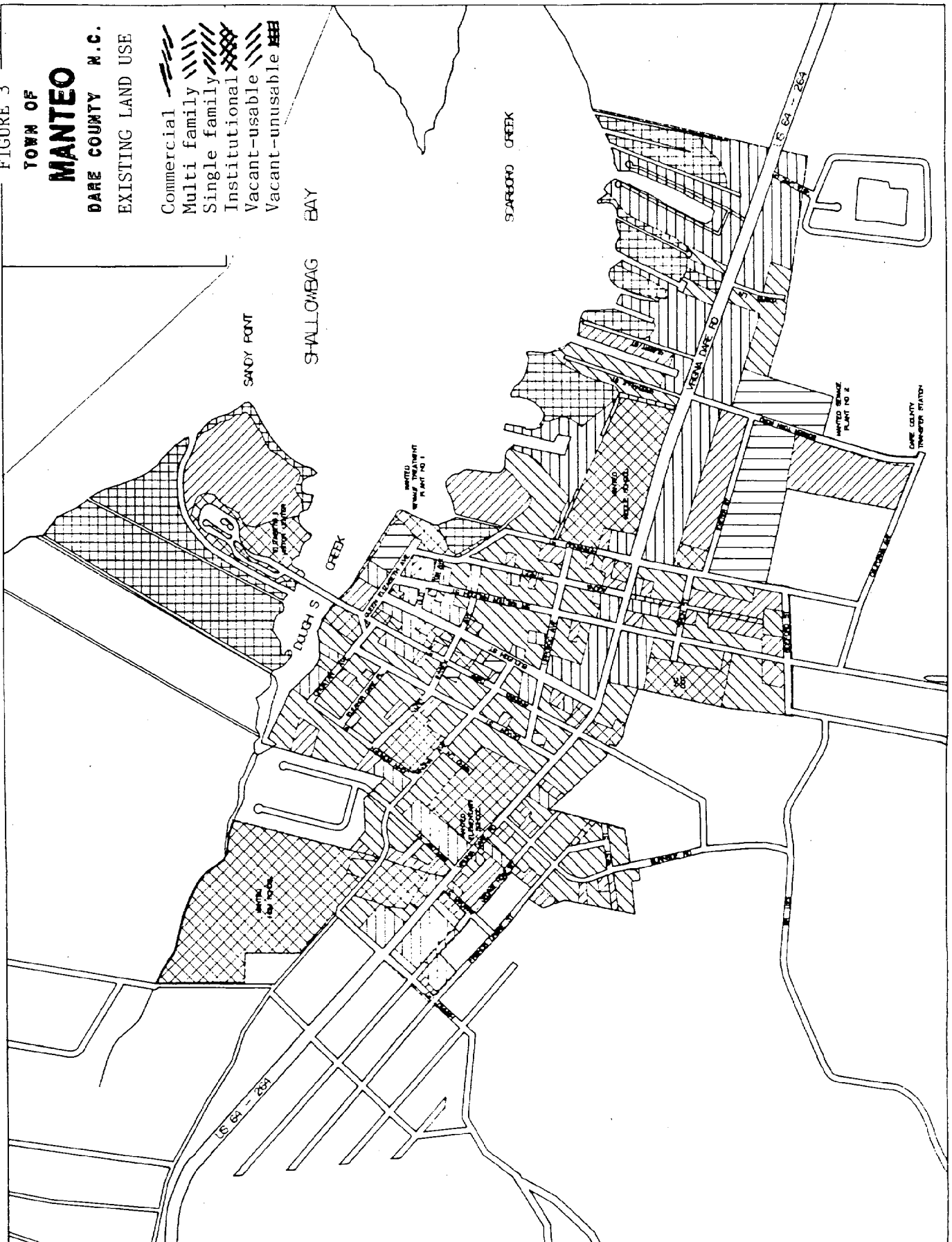
TOWN OF

MANTEO

DARE COUNTY N.C.

EXISTING LAND USE

- Commercial
- Multi family
- Single family
- Institutional
- Vacant-usable
- Vacant-unusable



Commerical development is concentrated in two areas: along 64-264 and in the downtown area. There are several types of commercial areas involved and although they are mapped as one it is helpful to think of them separately. First, there is highway commercial; development which is oriented either to the traveling visitor or to residents shopping with their auto. This includes such land uses as motels, fast food restaurants, gas stations and shopping centers. These uses are almost exclusively located on 64-264 and rely on the constant auto traffic and the traveling visitor for their business. There are other commercial uses which occur on 64-264 but which could operate elsewhere if space and access were available. These include building material suppliers, hardware stores, auto parts stores, banks, and other shops. While these activities actively market themselves to the traveler, they also, and in some cases primarily, exist to serve the needs of the permanent residential and business community. They exist along the highway partially because of ease of access and the availability of land for parking.

Commercial activities in the downtown area are of several basic types. First and most obvious are the restaurants, gift shops, antique shops, and other speciality shops oriented to the visitor. Most are located in old buildings and try to capture the flavor of the old downtown area in their marketing. Next are what might be considered the traditional retail businesses of downtown Manteo. These include several restaurants, a theatre, and a furniture store among others. These are patronized by both residents and visitors. Third there are a number of commercial and professional offices including law offices, real estate

and insurance offices and an architect's office. And finally there are those few remaining fish houses located between Dough's Creek and Croatan Avenue, reminders of what the entire waterfront was like years ago. The Salty Dog Marina, though not downtown, is another nearby business which depends on a waterfront location. While most downtown commercial use is concentrated east of Lord Essex Avenue and between Ananias Dare and Agona Street, there are scattered commercial uses (offices, guest houses) throughout the old Manteo area. In general, excepting of course in the corridor surrounding 64-264, there do not appear to be major conflicts between commercial and residential uses.

Manteo seems to have a high proportion of institutional land uses. These include government offices and facilities, parks, schools, churches, cemeteries, and office buildings devoted to non-profit functions. This concentration is consistent with Manteo's function as the county seat of Dare County and as the site of three of the County's schools. The State Highway Division facilities, the Elizabeth II site and Ice Plant Island generally are all within the city limits.

The last category of land use mapped is vacant land. This is considered to be of two types: usable and unusable. In general, Manteo has very little usable vacant land within the current city limits. There is some acreage (less than 8 acres) owned by the Town across Bowser Town Road from the new sewer plant, and there are, scattered through town, a number of vacant lots. Otherwise, the entire town is developed, though some parts of it may be available for redevelopment.

Vacant land which might be considered unusable is primarily in

Marsh and most of this lies adjacent to Shallowbag Bay south of the downtown area. Virtually all of this marsh is owned privately as part of lots which front on either 64-264 or Fernando Street.

There is also a large chunk of vacant though subdivided land known as Wescott Estates which lies between old Manteo and the newly annexed Manteo High School Property. This is not currently within the Town limits.

In summary, Manteo's land use is generally indicative of a mature community. The land uses of the various areas are well established and the general trend in the future will be toward redevelopment of land which is underutilized. Most of this land lays along 64-264 where commercial development can be expected to fill-in vacant land south of Budleigh and slowly press to replace the residential development north of Budleigh. Manteo's current economic situation all but dictates that much of the future pressure will be to expand the highway commercial development. There is currently no apparent demand for commercial services anywhere else in town.

2. Areas of Land Use Change or Conflict:

There are three areas in Manteo where land use change and subsequent conflict will likely occur. First, in the downtown area, much of the available vacant land is scheduled for development including a large parcel which currently serves as parking near the Town docks. When this development begins, the current parking will be displaced and this will quite likely cause a major stir among residents.

Secondly, in the residential areas west of Highway 64/264, are many vacant lots. This area is the primary low income residential area of

Manteo and as the value of land with sewer access increases, pressure will build to redevelop that open land into more expensive housing. This may displace some existing residents and will likely create some conflict.

Finally, the Highway 64/264 corridor is subject to all the conflicts and problems which normally accompany rapid strip commercial development.

C. PLANS, POLICIES, AND REGULATIONS

As a result of previous N. C. D. N. R. C. D. grants and because of the intense activity which preceeded the 400th Anniversary of the English settlement of Roanoke Island, Manteo has been subject to much recent study and planning. Studies and plans have also been done for Dare County in general and for the areas surrounding Manteo. This section of the report looks at the various plans currently in effect for the Manteo area and evaluates the various implementation mechanisms which accompany them. Local plans and ordinances are discussed first, followed by areawide, county, state and federal programs.

1. Local Plans, Policies, and Ordinances:

As mentioned above, many plans, studies, and projects have been carried out in Manteo since 1980, principally in anticipation of expected rapid growth associated with the 400th Anniversary. This section discusses the various plans which have been prepared and notes what has been implemented and what has not. It also discusses the various ordinances enacted by the Town which affect development.

a. Local Plans and Policies

1) 1980-81 Development Plan. This plan was prepared by the Town with the assistance of faculty and students from the School of Design at N. C. State University. The plan consisted of six volumes as follows:

1. Coastal Area Management Act Land Use Plan 1981 for the Town of Manteo, Manteo, North Carolina, 1981.
2. Survey of Townspeople, Public Report One of a Plan for Manteo's Future Development, Raleigh, NC, 1980.
3. Theme for the Future, Public Report Two of a Plan for Manteo's Future Development, Raleigh, NC, 1980.
4. Guide for Development, Public Report Three of a Plan for Manteo's Future Development, Manteo, NC, 1981.
5. Economic Analysis, Public Report Four of a Plan for Manteo's Future Development, Manteo, NC 1981.
6. Roanoke Island's Past, Public Report Five of a Plan for Manteo's Future Development, Manteo, NC, 1981.

The 1981 Coastal Area Land Use Plan was reviewed in detail and the implementation status of the various policies and proposals contained in the plan is discussed in Appendix A. The Land Use Plan consisted primarily of policies and objectives oriented toward the fulfillment of the following six goals.

Goal 1 - Develop a new purpose for the downtown.

Goal 2 - Preserve and enhance the character of Manteo through comprehensive planning for the town's future.

Goal 3 - Improve community services to residents of Manteo.

Goal 4 - Celebrate the quadricentennial of the first Roanoke colonies in Manteo.

Goal 5 - Develop a more economically viable community.

Goal 6 - Provide recreational opportunities for all Manteo residents.

The other documents provide information and ideas which were designed to contribute to the achievement of the Plan's goals. The most important document is Volume 3, Guide for Development which, while focusing primarily on the long term design of the downtown area, also provides some guidance for other areas of the Town. The 1981 Plan was an imaginative and very well prepared document, and several of the projects proposed there have in fact been achieved. Its main fault lies in its inability to predict the actual forces which would drive the Town's development.

Despite the towns effort at major downtown redevelopment, downtown tourism is still a very small part of the current activity. The main thrust of commercial development is along 64-264 and the plan's lack of detail regarding design and uses in that corridor is a major defficiency.

These contrary occurrences are not the plan's fault. It simply failed to acknowledge that the aggressive, design oriented leadership which existed in 1980 would logically change and that since the vision espoused by the plan was not shared unanimously by the Town, that would change as well.

The 1981 plan and its attendant documents are not now used by the Town to guide decisions. Nonetheless, the burst of activity and innovation which occurred in the early 1980s has forever changed Manteo.

2) Water and Sewer Development Plan. This plan was developed for the Town by Andrews, Miller & Associates, Inc. - Engineers and Surveyors in 1975-76 and was implemented over approximately the following five years. The major annexation (247 acres) which occurred in 1977 was layed out in this report and the final surveying was carried out by the same firm.

The plan lays out arrangements of new water and sewer lines to serve the areas proposed for annexation. This plan did not recommend a new sewage plant but did propose changes in the existing plant relating to solids handling.

The plan was implemented during the period 1977 to 1981 and at this point about 95% of the lots in Manteo have water and sewer service available.

3) Flood Insurance Study. This study was prepared for the Town of Manteo by the Federal Emergency Management Agency (FEMA). After several drafts and considerable negotiation over 100 year flood elevations, the final results were accepted by the Town in early 1985. The areas projected to be innundated by the 100 year flood as set forth in the approved study are shown on Figure 6. This study now serves as the basis for all building elevations in the community.

4) Traffic Operations and Parking Study. This study and plan was prepared for Manteo by the N. C. Department of Transportation in 1981. It evaluates the traffic flow, parking, sign needs, speed zones and other vehicular needs in the downtown area and makes recommendations. A comparison of the recommendations with the existing con-

ditions in Manteo reveal that while several major changes recommended by the plan have been accomplished, others have not. Parking continues to be an area where problems exist and where the majority of the plan's recommendations have not been followed.

5) Stormwater Management Plan. This plan was prepared for the Town in 1982 by McDowell and Jones, Engineers and Surveyors. It was funded in part by a grant from the N. C. D. N. R. C. D. This plan contains a careful description and accurate maps of the stormwater management system in Manteo. It identifies drainage problem areas, calculates current and "built-out" stormwater flows and makes specific structural and policy recommendations for the Town, County, and State to consider. Several of the structural recommendations have been implemented, but the important policy recommendations have not been addressed. The Town does not yet have a drainage policy or a drainage ordinance.

The plan does not address the issue of pollution of coastal waters around Manteo by stormwater inflows.

6) Urban Forestry Report. This report and plan was prepared for the Town in 1980 by the N. C. DNRCD, Division of Forest Resources. The report's purpose is to present an inventory of Manteo's street trees and to make recommendations regarding future plantings and maintenance. The Town has a Tree Board and an ordinance (15.1) regarding trees. Trees have not been an issue to this point in the current planning and it is not clear to what extent the recommendations in the report have been carried out.

7) Emergency Operations Procedures (Draft). This draft procedures document was prepared by the previous Town Administrator in November 1985 apparently in response to what had occurred in the Town during Hurricane Gloria. This document remains in draft as of March 1986.

The document sets forth a town chain of command in the event of emergencies and describes the general actions to be carried out by responsible officials before, during, and after the disaster. It is designed to be consistent with Dare County's Disaster Plan (see below).

b. Local Ordinances

1) Manteo Zoning and Development Ordinance. This is a comprehensive ordinance which contains virtually all of Manteo's rules regarding development. Its contents include:

- a) Provisions associated with the classic zoning ordinance including zoning districts, permitted uses, conditional uses, dimensional requirements, parking requirements, and provisions for nonconforming uses.
- b) Subdivision Ordinance
- c) Mobile Home Ordinance
- d) Sign Ordinance
- e) Flood Damage Prevention Ordinance
- f) Planned Unit Development Ordinance
- g) Building Permit Ordinance
- h) Provisions governing implementation, interpretation, application for permits, amendments, and appeals.






FIGURE 4

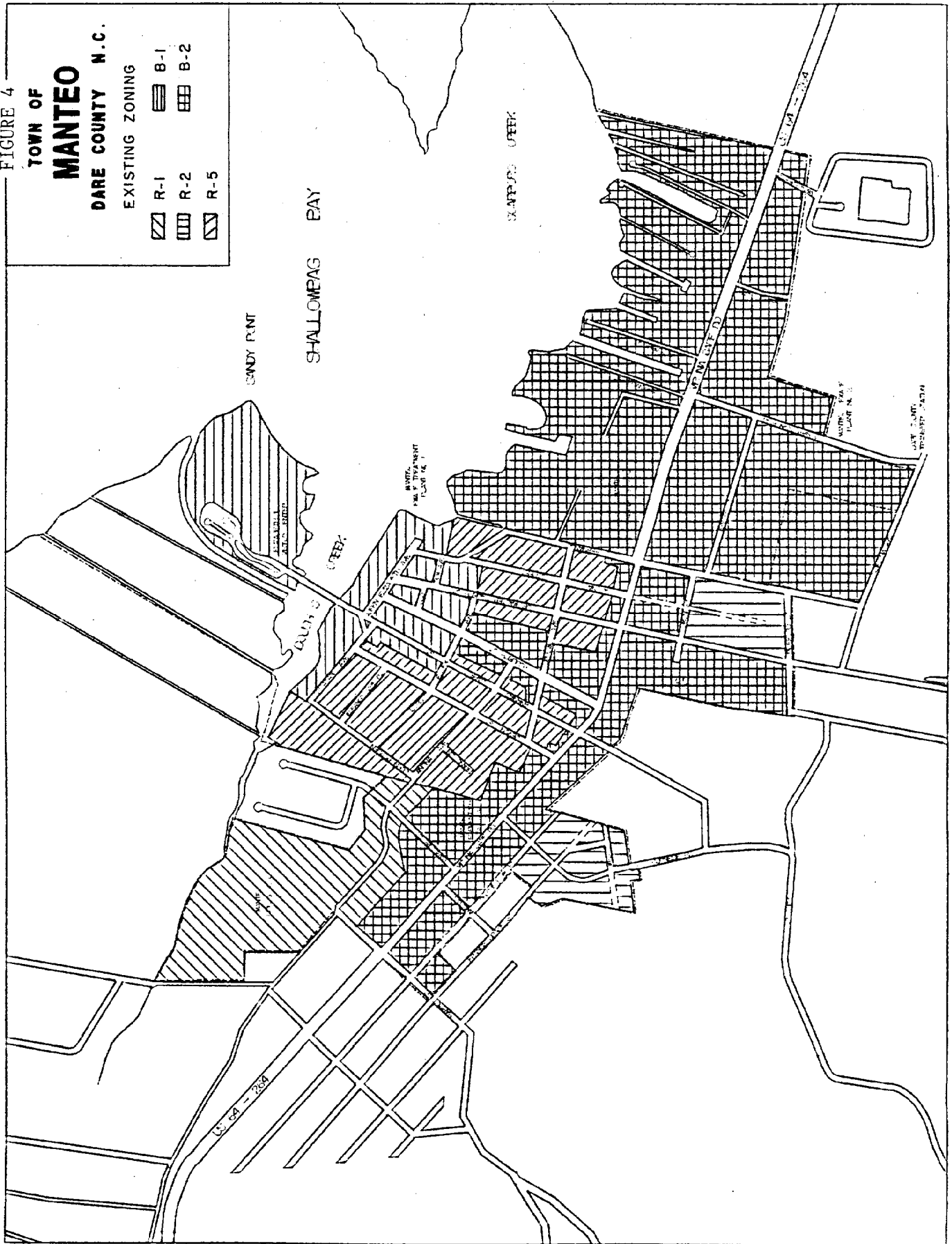
TOWN OF

MANTEO

DARE COUNTY N.C.

EXISTING ZONING

- | | | | |
|---|-----|---|-----|
|  | R-1 |  | B-1 |
|  | R-2 |  | B-2 |
|  | R-5 | | |



The ordinance was originally enacted in 1979 but was extensively amended in 1982 using N. C. D. N. R. C. D. funds.

Figure 4 (pg. II-19) shows the Town of Manteo and indicates the location of the various zoning districts. Table 3 lists the five zoning districts and gives specific information about each, including the permitted and conditional uses.

The ordinance is administered by the Manteo Planning Board, through which every proposed building or development related action must pass. The planning board is normally staffed by the Town Administrator. This position was vacant from January through May 1986 and the lack of staffing cause significant problems for the Board. The ordinance applies only within the Town limits since Manteo has no extraterritorial jurisdiction.

As it currently exists, the ordinance is comprehensive and well organized and written, though it contains (or lacks) several things which have caused or may cause problems.

° As shown on Table 3 and Figure 4 a very large amount of land in Manteo is zoned for commercial uses. Seventy percent of Manteo's land base is zoned commercial and this is extreme from any perspective. This is in variance to one of the avowed objectives of the 1981 plan which on page 12 states as an objective: "Protect Residential Neighborhoods". Because of the large amount of commercially zoned land, requests for zoning changes are very infrequent.

° There are no current programs, zoning or standards to protect the downtown "historic" district. Such an ordinance was proposed but so far as is known, was never adopted.

TABLE 3

LAND USES PERMITTED BY MANTEO ZONING ORDINANCE

District Code	R-1	R-2	R-5	B1	B2
District Name	Low Density Residential	Med. Density Residential	General Residential	Village Business	General Business
Acreage Zoned	30.2	41.1	63.3	82.8	231
Percent of Town	6.7	9.2	14.1	18.5	51.5
Minimum Lot Size	15,000	10,000	7,500	Suffic.	Suffic.
Max. Lot Coverage	30%	30%	30%	No Max.	85%
Uses Permitted	<u>By Right</u>	<u>By Right</u>	<u>By Right</u>	<u>By Right</u>	<u>By Right</u>
	°Single fam. detached dwellings	°Single fam. detached dwellings	°Single fam. detached dwellings	°Offices (list)	°Offices (list)
	°Accessory Buildings	°Duplexes	°Accessory Buildings	°Retail (list)	°Retail (list)
	<u>By C.U.P.</u>	°Accessory Buildings	<u>By C.U.P.</u>	°Services (list)	°Services (list)
	°Fire Sta.	°Mobile Hms.		°SF Dwell	°Auto Sales
	°Schools	°Modular Units		°Town-houses	°Outdoor Rec.
	°Public Bldgs.	<u>By C.U.P.</u>	°Fire Sta.	°Apts.	°Indoor Recrea.
	°Home Occ.		°Schools	°Condos	°Bldg. Supply
	°Clubs (list)	°Fire Sta.	°Public Bldg.	°Public Util.	°Plumb. Supply
	°Public Utilities Facilities	°Schools	°Public Utilities Facilities	°Group Dev. Projs.	°Cabinet Shops
	°PUDs	°Public Bldgs.	°Water Related Occup.	°Outdoor Markets	°Motels
	°Group Develop. Proj.	°Home Occ. (list)	°PUDs	°Cottage Ind.	°Hotels
	°Modular Classrms (Temp)	°Public Util. Facil.	°Group Develop. Projs.	°PUDs	°Contractors
		°PUDs	°Churches	<u>By C.U.P.</u>	°SF Dwell
		°Group Dev. Proj.	°Cemetaries	None	°Boat Sales
		°Churches	°Duplexes		°Ice Plants
		°Cemetaries	°Townhouse Devs.		°Duplexes
		°Mobile Home Parks			°Funeral Homes
		°Townhouse Devs.			°Radio/TV Stations
					°Bus Terminals
					°Marinas
					<u>By C.U.P.</u>
					°Service Stat.
					°Public Util. Facilities
					°Townhouses & Condos
					°PUDs
					°Group Develop. Projs.

- ° There are no drainage requirements in the ordinance.

Particularly as the commercial development along 64-264 increases in intensity, drainage will become a much more critical problem.

° Because of the comprehensiveness of the ordinance, and the detail which it contains, problems are occasionally encountered in implementation. Situations occur in which an individual's desires to develop are thwarted by the ordinance, and the Planning Board feels frustrated by its inability to approve what most agree is a desirable end. This problem is also exacerbated by two other factors:

- a) The lack of a land use plan which addresses the rapidly developing 64-264 corridor. Such a plan could help the Board when addressing site specific issues.

- b) The problem always encountered in small towns where all the actors are known to one another. The Board's inclination is to help the citizen do what he wants (within reason) and members often find it very difficult to say no - especially when a project is marginal.

2) Water and Sewer Ordinance. Manteo has a city-wide water and sewer system and has adopted ordinances which address the requirement to connect, fees, allowable discharges to the sewer system and other factors.

In general, all structures used for habitation, occupancy or business must be hooked up to the sewer system and the water system. The ordinance prohibits outside toilets and septic systems in the Town of Manteo. While this ordinance has been generally followed, there are some exceptions including the Shallowbag Bay Campground. This area

receives water service but is not connected to the sewer. There have been reports of sewage related pollution in the waters of that area. The Town is currently moving to correct that problem.

2. Important Plans, Policies, and Ordinances of Other Agencies:

Manteo is located in an area where a large number of government agencies have an interest. While most of them have only a limited direct affect on the Town, all have some indirect affect. This section describes in general terms, the important programs of other governmental agencies in the Manteo area including the Roanoke Voyages Corridor Commission, Dare County, the State of North Carolina and selected agencies of the Federal Government.

a. Roanoke Voyages Corridor Commission.

The Corridor Commission was established by State Statute in June 1982 in order to "...effect and encourage restoration, preservation and enhancement of the appearance and aesthetic quality of the U.S. Highway 64 and 264 travel corridor through Roanoke Island..."

The Commission has the authority to make rules governing:

- 1) Off premises signs within 660 feet of the Right of Way (ROW);
- 2) Landscaping of the ROW
- 3) Utilities within 50 feet of the ROW
- 4) Tree cutting associated with commercial development within 50 feet of the ROW.
- 5) The issuance of permits for off premises signs and for commercial development adjacent to the ROW.

The Commission is authorized to enforce its rules but it is not a state agency per se and receives no appropriation from the legislature.

The Commission has 20 local members appointed from Raleigh and several local officials as ex-officio members.

The Commission adopted rules (standards) in April 1983 governing all items within the scope of its authority. While there is regular grumbling about the various requirements, particularly those relating to vegetation removal, the major issues surrounding the Commission so far involve electrical utilities.

The Commission, in at least one case, has ordered North Carolina Power to place upgraded service lines underground. This is significantly more expensive than traditional above ground service and the Utility has refused to bear the cost itself and believes that N. C. Public Utilities Commission Rules prohibit the added costs from going into the rate base. The Corridor Commission disagrees and the issue is scheduled for litigation in Dare County Superior Court.

A long term objective of the Commission is to remove overhead wires from the corridor entirely. This will be expensive and attempts are apparently being made to seek an equitable formula for financing these improvements.

b. Dare County.

Dare County has several existing and proposed plans which can affect the Town of Manteo, including the current Land Use Plan (1982), The Hurricane Evacuation Plan, (1983), and the currently ongoing Carrying Capacity Study.

1) The Dare County Land Use Plan was prepared under the auspices of the Coastal Area Management Act and was adopted by the Dare

County Board of Commissioners in March 1982. The general philosophy of the Plan with respect to Roanoke Island was:

a) In general - locate the dense development in and around the existing villages of Manteo and Wanchese.

b) Under the state's land classification scheme:

(1) Manteo was classified as "developed"

(2) The areas north and west of Manteo and a strip along 64/264 out to and including the Pirates Cove area were classified as "transition"

(3) The extreme north end of Roanoke Island was classified as "community"

(4) The central part of Roanoke Island, the marshland east of Shallowbag Bay and areas in federal ownership were classified as "conservation."

A review of the current zoning map of Dare County indicates that in a general sense, the zoning complies with these classifications. Two important points regarding Dare County land development policy near Manteo are:

° The county has a water system in place which duplicates the Town's in some areas. The areas served solely by the county lie primarily west of Manteo along Sir Walter Raleigh Street, Burnside Road, and Monday Dough Road (SR-1118). These areas are all within the transition class.

° The County has so far been unwilling to grant Manteo extraterritorial jurisdiction. This was cited in the Manteo 1981 Plan as an

important need. The new administration has not formally approached the County on this issue.

2) The Dare County Hurricane Evacuation Plan was first adopted in 1977 and was revised in August of 1983. The Dare County Disaster Relief and Assistance Plan (April 1984) provides additional analysis of evacuation times, as does the Carrying Capacity Study discussed below.

The Hurricane Evacuation Plan provides for evacuation of beach area residents and visitors and those in threatened low-lying areas upon decision of the Control Group Chairman (Chairman, Dare County Board of Commissioners). The analysis of evacuation in the Disaster Plan notes that in a category 4 storm (eye passing over the county), Manteo would also need to be evacuated.

The Disaster Plan estimates that 14 hours would be needed to evacuate 90,000 people from the Outer Banks assuming that 45% went north across U.S. 158 and 55% went west across U.S. 64-264.

The Carrying Capacity Study estimates that 20-24 hours would be needed for evacuation of the population at peak season (145,000 people). It assumes that 70% of the population will leave via 158 while 30% will leave via 64-264.

The main apparent difference between the two studies is that the Disaster Plan assumes two lanes of traffic across the bridges while the Carrying Capacity Study assumes one lane. The Hurricane Evacuation Plan does not address this issue.

The Hurricane Evacuation Plan designates 13 shelters on Roanoke Island (4 class A, 8 class B, 1 class C) with a potential capacity of

about 1480 people. Nine of these (1,066 people) are located in Manteo proper.

As discussed in another part of this report, the major storm damage threat in Manteo comes from flooding. There are no areas where wave damage is predicted by the F.E.M.A. The experience with Gloria seems to bear this out.

In conclusion, the residents and visitors in Manteo (estimated by the carrying capacity study at a peak of 3500) comprise a very, very small part of the total potential evacuation group. Adequate shelters exist in the community for the permanent population and most visitors in the community come only for the day and normally from the beach tourist community.

The current evacuation and hurricane response plan deals adequately with Manteo's situation (at least from a county perspective) and particularly considering the nature of the potential threat.

c. The Dare County Carrying Capacity Study was prepared for the County by Booz, Allen, & Hamilton, Inc. The study evaluates the capacities of all the major public service systems in the county and is intended to provide the county optional development scenarios and policy recommendations. The services analyzed include:

- 1) Development administration
- 2) Public water systems
- 3) Wastewater disposal (including septic tanks)
- 4) Solid waste collection and disposal
- 5) Transportation and hurricane evacuation

- 6) Emergency medical services
- 7) Public safety
- 8) Public education
- 9) Court system
- 10) Jail system

While the various services analyzed vary in their adequacy, the report released in November 1985 draws the following conclusion:

"In general, Dare County and its constituent towns are responding to service level demands which equal or exceed their present capacities during the peak months. In some instances, service demands are approaching finite carrying capacity limits. In a few cases, demand has already exceeded capacity." (pg. 6)

The major inventory document cited above does not propose policy and therefore it is not possible to evaluate it with respect to Manteo's situation. Certain factors however are worthy of note.

- ° The Town of Manteo is not currently constrained by its water supply and, if the infiltration/inflow problem is addressed, should not be constrained by its sewage disposal. The Town is otherwise tied in to whatever limits the county is experiencing.

- ° The availability of the Manteo sewer system is not recognized by the Carrying Capacity Study as an advantage and its sewage disposal analysis concentrates on septic tanks. Forthcoming documents may treat this differently.

- ° Projections and analyses for areas other than municipalities are very general so it is not possible to break out conditions in what might be considered the Manteo urban area.

° The study, is a valuable asset to the County and others, particularly if they actually intend to begin managing the County's growth.

c. State Programs

Manteo is affected by numerous state programs. Some which appear important at this time include:

° DOT's actions regarding Town streets on the State Highway System and the relatively small amount of new highway construction projected for the area in the 1985-1986 Transportation Improvement Program.

° NRCD's decision to grant a discharge permit to the Roanoke Properties Group allowing them to discharge sewage effluent into Shallowbag Bay.

° The general permitting authorities of the CRC and the EMC and particularly new initiatives involving stormwater and marinas.

° The policies of the Department of Cultural Resources regarding the Elizabeth II and the State Historic Site on Ice Plant Island.

° The policies and rulings of the Public Utilities Commission regarding financing of underground utilities service in the 64-264 corridor.

d. Federal Programs

Important Federal programs include:

° The Federal dispute over the long term maintenance of the Oregon Inlet channel.

° The lack of Federal funds to provide for the improvement and maintenance of navigation channels around Roanoke Island

- ° The impact of military aircraft operations on the willingness of commercial air carriers to serve the Manteo Airport.

- ° The policies of the National Park Service regarding campground opening and operations at the Fort Raleigh N.H.S.

D. NATURAL RESOURCE FACTORS AFFECTING DEVELOPMENT

This section of the report discusses the physical conditions in the planning area including, geology and soils, water--both quantity and quality, flooding and important natural areas and communities.

1. Geology and Soils:

The geology of the Dare County Area is characteristic of the Atlantic Coastal Plain; a wedge shaped mass of unconsolidated sedimentary deposits consisting of flat layers of sand, gravel, silt and clay overlaying the older, hard, crystalline rocks of the precambrian age. Although no site specific data has been collected, the precambrian rocks are estimated to lie approximately 10,000 feet below the land surface.²

Exploratory soil borings have been done at various points around Manteo and the results indicate that from the land surface down to about 85 feet below MSL there exists a sand and shell layer which contains the unconfined aquifer from which the Town's previous wells derived their water. Below this lies a clay layer about 40 to 60 feet thick and then another sand layer. This is in turn underlain by more sand. This same

²Source: Conrad, Stephan G. and Stuckey, Jasper L., Explanatory Text for Geologic Map of North Carolina, Raleigh, 1958, pg. 46.

TABLE 4

CHARACTERISTICS OF SOILS

Town of Manteo and Vicinity, North Carolina

SCS Map Code	Name of Soil	Very Severe Limitations	Severe Limitations	Moderate Limitations	Slight Limitations	Drainage Characteristics
33	Onslow Loamy Sand			Dwellings Streets		Moderately well drained
35 (32)	Icaria Loamy Fine Sand		Dwellings Streets Septic Tanks			Very poorly drained
30	Baymeade Fine Sand		Septic Tanks		Dwellings Streets	Well drained
10 (17)	Psammets (Made Land)		All uses			Very poorly drained
11	Hobonny Muck	Dwellings Streets	Septic Tanks			Very poorly drained
34 (2)	Leon Fine Sand	Septic Tanks	Dwellings Streets			Very poorly drained
37	Belhaven Muck		Dwellings Streets Septic Tanks		Ponds	Very poorly drained
38	Ponzer Muck		Dwellings Streets Septic Tanks		Ponds	Very poorly drained
13	Ozier Fine Sand		Dwellings Streets Septic Tanks			Poorly drained
8	Ousley Fine Sand		Dwellings Streets Septic Tanks			Moderately well drained

Source: Soil Survey of Outer Banks, N.C. - U. S. D.A. SCS-1977

Soil Survey of Roanoke Island and Mainland Areas, Dare County, N.C. - U.S.D.A. SCS (unpublished).

FIGURE 5

TOWN OF

MANTEO

DARE COUNTY N.C.

SOILS

Onslow

Icaria

Baymead

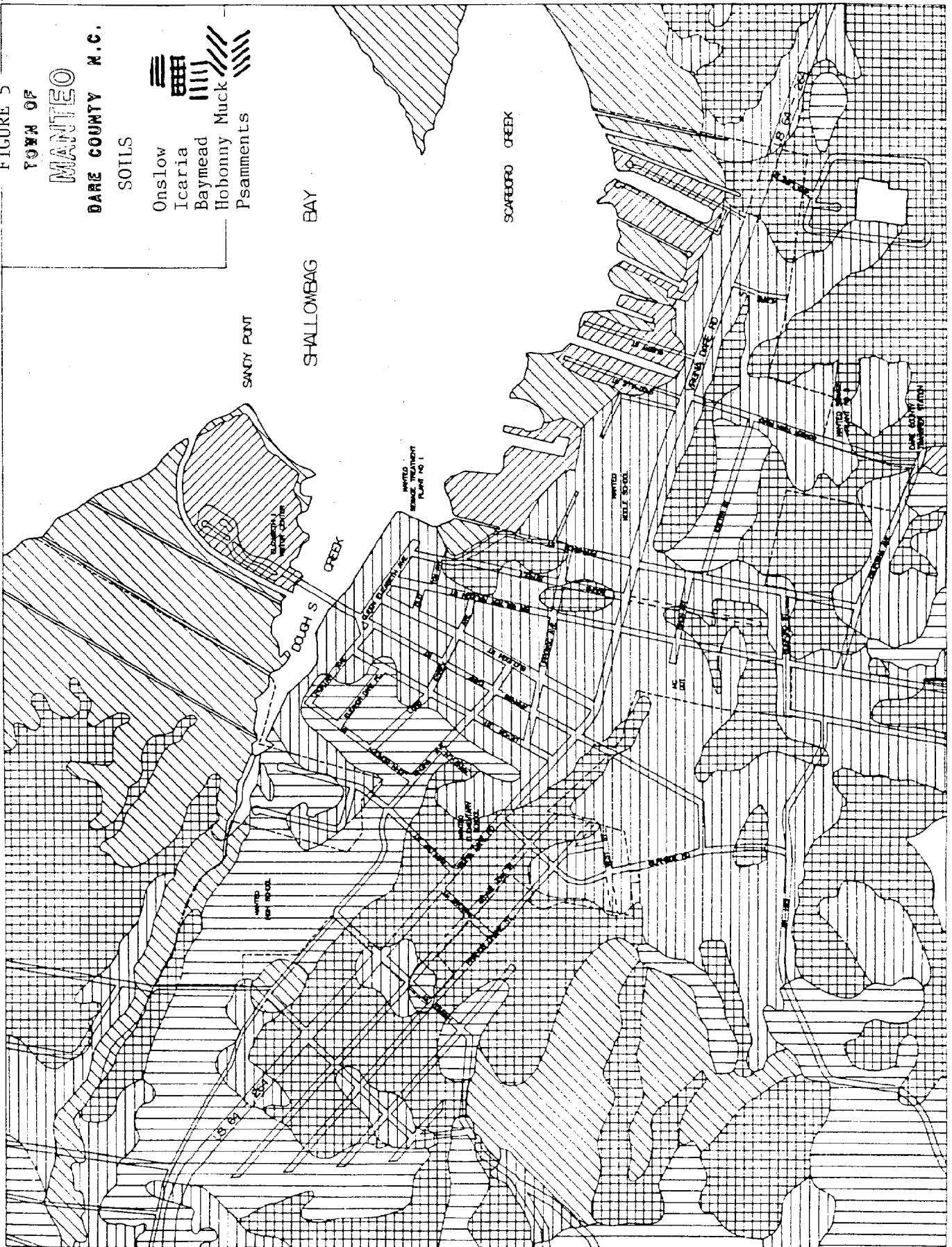
Hobonny Muck

Psammments

SANDY POINT

SHALLOWBAG BAY

SCARBORO CREEK



phenomenon is apparent from the results of drilling done by the North Carolina DOT in preparation for the construction of the Dough's Creek Bridge. Various grades of sand are shown to overlay a clay layer beginning at around 50 feet below the land surface. There is nothing about the deeper geology which will directly affect land development in the Manteo Area although the protection of the two principal aquifers from pollution should be a concern for future planning.

The soils of the planning area are shown on Figure 5 and described on Table 4. The majority of the land within the Town limits is underlain by a soil type known as Onslow loamy sand. This is a moderately well drained soil which, while severely limited for septic tank leach fields, is reasonably well suited for buildings and roads. The seasonal high water table is within 1.5 to 3 feet of the surface. As shown on Figure 3, a portion of the Town is underlain by Icaria loamy fine sand. This very poorly drained soil is spotted across the entire town but a large area of it lies on either side of Highway 64/264 near the northern town limits. As reported in the drainage plan discussed previously, this is an area of town with long standing drainage problems. The seasonal high water table is at or near the surface and the soil is classified by the SCS as severely limited for all urban uses.

There are two areas of town underlain by Baymeade fine sand and this soil also tends to predominate toward the northern end of Roanoke Island. This well drained soil is well suited to urban development although its high permeability makes it generally unsatisfactory for

septic tank filter fields. The soil generally occurs on the higher areas. The northern area of downtown, the new high school area and portions of the land underlying Harbortown and Baytree are composed of Baymeade soils.

Several areas of Manteo are composed of dredge spoil, landfill or "made land" known technically by the term Psammments. These are most obviously located adjacent to the canals dredged inland from Shallowbag Bay and on Ice Plant Island. These soils are considered by the SCS to be severely limited for all urban uses, and because of their permeability, are especially unsuited for septic tank filter fields. This is a partial explanation for the sewage disposal problems encountered at the Shallowbag Bay campground.

The marsh areas surrounding Manteo are underlain by the so called Hobonny muck. These soils consist of a very deep organic layer (50"+) overlying sand. The soils are characterized by the presence of a Black Needlerush marsh community.

Other soils in the vicinity of Manteo include Leon fine sand, Belhaven muck, Ponzer muck, Ozier fine sand and Ousley fine sand. All except the Ousley sand have drainage problems and all are severely limited for urban uses.

As the SCS reports, the fact that a soil is severely limited for a particular use does not mean that it cannot be used. It does mean that careful planning and engineering and usually expensive construction is needed to overcome the limitations. All of Manteo's soils except possibly the Baymeade sands are limited in some way. Construction tech-

niques in town have adapted to accommodate the limitations. Future development, utilities expansions and annexations should consider soil types and their development potential.

2. Water

Waters in the planning area are of three types: groundwater, fresh surface water and saltwater. This section discusses the characteristics of each type.

a. Groundwater: Groundwater occurs beneath the planning area in three distinct aquifers.³ These aquifers are composed of bedded sands and shells with some silts and clays. They are separated by layers of clay which tend generally to limit the movement of water between the various layers.

The uppermost aquifer is known as the water-table or "unconfined" aquifer. It extends from the ground surface to about 85 feet below MSL under Manteo. It extends down to only around 30 feet below MSL at Mann's Harbor to more than 100 feet below MSL at Kitty Hawk. This aquifer is the source of water for many domestic and commercial wells in the area and was the source for Manteo's three municipal water supply wells until they were closed in 1979. Manteo's wells would pump up to 75 gpm and while the water was slightly high in hardness, its quality was generally good. This aquifer is recharged directly from the land surface and therefore the quality, particularly close to the surface, will reflect the quality of the recharge water. The surface of this

³Groundwater information has been taken from: Potential Ground-water Supplies for Roanoke Island and The Dare County Beaches, North Carolina. Report of Investigation No. 9 - G. W. Division - N. C. D.N.E.R. - Raleigh, 1972.

water table aquifer lies close to the land surface under much of Manteo and tends to rise and fall significantly in response to heavy rain or flooding.

The second aquifer begins at about 140 feet below MSL at the north end of Roanoke Island and climbs to within about 110 feet below MSL near Wanchese. This aquifer is about 80 to 90 feet thick below Manteo. It is the primary source for the groundwater withdrawn by the Dare County Regional Water System. Its quality is generally good beneath Roanoke Island although some wells on the beaches have indicated very high chloride concentrations. This aquifer appears to be recharged from areas on the mainland and on Roanoke Island. The heavy pumping by the county water system is alleged to have significantly lowered the water level in this aquifer at the southern part of the island but data to support this contention has not been reviewed.

The third and deepest aquifer begins about 300 feet below MSL and is about 100 feet thick. Available data indicates that yields from this aquifer are somewhat lower than from the other aquifers and the quality is not as good. This aquifer is not currently used as a source of supply.

b. Fresh Surface Water. There are relatively few sources of fresh surface water in the area and those that do exist tend to appear and disappear coincident with rainy periods when the water table rises and when stormwater flows through the various drainage ways. Dough's Creek and Scarboro Creek both drain into Shallowbag Bay and these are more or less fresh depending on the groundwater table and the wind tides forced into the Bay.

c. Salt Water. Roanoke Island is surrounded by the waters of Roanoke Sound and Croatan Sound and these waters form part of the vast estuarine area along the North Carolina Coast. Shallowbag Bay is an important part of this estuarine system. The historic economy of Manteo was tied directly to these Bays and Sounds through fishing and the present economy is still heavily influenced by the water through recreational fishing and tourism.

The water quality of the Bay and Sound waters appear to meet current bacteriologic water quality standards based on samples collected by the N. C. Division of Health Services, Shellfish Sanitation Program. These samples are taken at three points in Shallowbag Bay, and all seem to indicate that bacteriologic quality, though variable, is currently good. Previous water quality problems were thought to have been caused by solids periodically discharged from Manteo's sewage treatment plant, which apparently caused a blanket of sludge to form on the bottom of the Bay. The dredging which was done in 1984 apparently removed much of the sludge and the plant's recent record of satisfactory performance has prevented the problem from reoccurring.

Both Shallowbag Bay and the Sound are classified as "SC" waters indicating that the waters are protected for fishing, secondary recreation, and any other usage except primary recreation or shellfishing for market purposes. This means that the waters in Shallowbag Bay are not currently protected for swimming. In order to protect for swimming an "SB" designation is required and this would mean different management requirements would be imposed on the sewage treatment plants discharging or planned to discharge to the Bay.

In summary, water of all types is abundant in the Manteo area and the need to protect its quality has not yet caused significant problems for the Town. In the future however, the need to protect the groundwater, fresh surface water and waters of the Bay and Sounds from pollution will become more critical as the Town seeks to develop these resources for immediate use (a beach on Iceplant Island) or to preserve them for future use (the groundwater below the Town).

3. Flood Hazards:

Because of its location and low elevation, Manteo has been subject to periodic flooding. This is primarily nuisance flooding caused by a combination of high tides and northwest winds. In general, winds from the West lead to high water conditions, while winds from the East lead to low water. The Town has worked aggressively with the National Flood Insurance Administration to develop an accurate definition of the flooding problem and in December 1985 a final Flood Insurance Rate Map and Flood Insurance Study for the Town was published. The following discussion is drawn generally from that study.

"North Carolina experiences hurricanes, tropical storms, and extra-tropical cyclones usually referred to as northeasters. Unlike a hurricane, which may pass over a coastal location in a fraction of a day, a northeaster may blow from the same direction and over long distances for several days... The contribution from northeasters to the overall storm surge elevation in the Manteo area (however) was found to be insignificant compared to hurricanes..."⁴

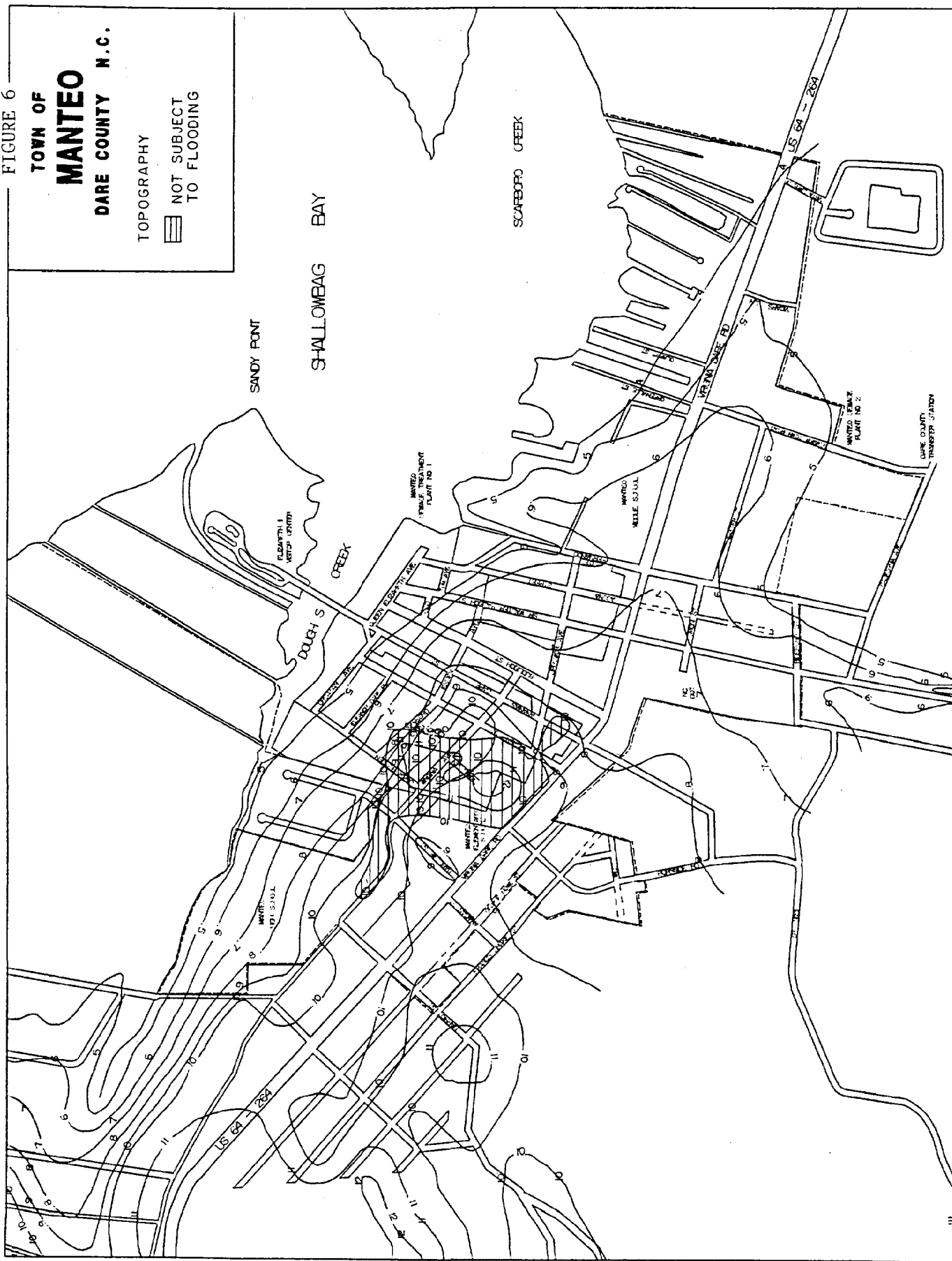
⁴Flood Insurance Study, Town of Manteo, N.C. Federal Emergency Management Agency, Dec. 4, 1985, p.g 4.

FIGURE 6

**TOWN OF
MANTEO**
DARE COUNTY N.C.

TOPOGRAPHY

▨ NOT SUBJECT
TO FLOODING



The flooding problem in Manteo is manifested by a gradual rise in the water level which slowly inundates the Town. There are no areas (i.e. "V zones") where wave actions is considered to be a problem.

While the maximum historical flooding documented by Town officials is only 7.5 feet, modeling of the 100 year flood elevations by the Federal contractor indicated that waters would rise to about 9 feet above mean sea level. As shown on Figure 6, this will produce inundation of most of the Town. Those areas lying generally east of 64, west of Essex Street, north of Devon Street and south of Barlowe Street would generally remain above the 100 year flood elevation.

This level of flooding has a one percent chance of happening in any given year. Floods of greater severity could also occur. The "500 year" flood would describe a water level of about 10.8 feet and this would result in a compression of the "dry" area.

There are two important factors which need attention. First, Town officials are convinced, based on their knowledge of previous flooding that the current 100 year flood protection level (Circa 9 ft.) is at least a foot too high. They are preparing surveys and documentation to demonstrate to FEMA that the current elevations are too high. Secondly, a comparison of the Flood Insurance Map with previous contour maps prepared for the Town, indicate that significant differences exist in the elevations and in the location of flood free lands in the Town. This plan recommends a survey to establish correct elevations for the Town.

4. Areas of Environmental Concern:

Manteo's roots go deep into the natural environment. Its origins as a fishing and boat building center bespeak its historic dependence on the sea.

The important natural areas in the Town all lay on its edge and are all related to the creeks, the marsh and the Bay. The Town itself is almost totally built up and does not contain any important terrestrial natural areas within its boundaries. The following general inventory is keyed to those types of natural areas considered as Areas of Environmental Concern (AECs) as defined in the Coastal Area Management Act. Their location is shown on Figure 7.¹ The following discussion is lifted directly from the Town's 1980 Land Use Plan, and still applies.

"The Manteo area contains the following components of the estuarine system: estuarine waters, coastal wetlands, public trust areas, and estuarine shorelines.

a. Estuarine Waters

Description: Estuarine waters are defined in G.S. 113A-113(b) (2) as "all the water in the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resources

¹Figure 7 is an approximate location only; onsite inspection is required to adequately locate AECs.

TOWN OF

MANTEO

DARE COUNTY N.C.

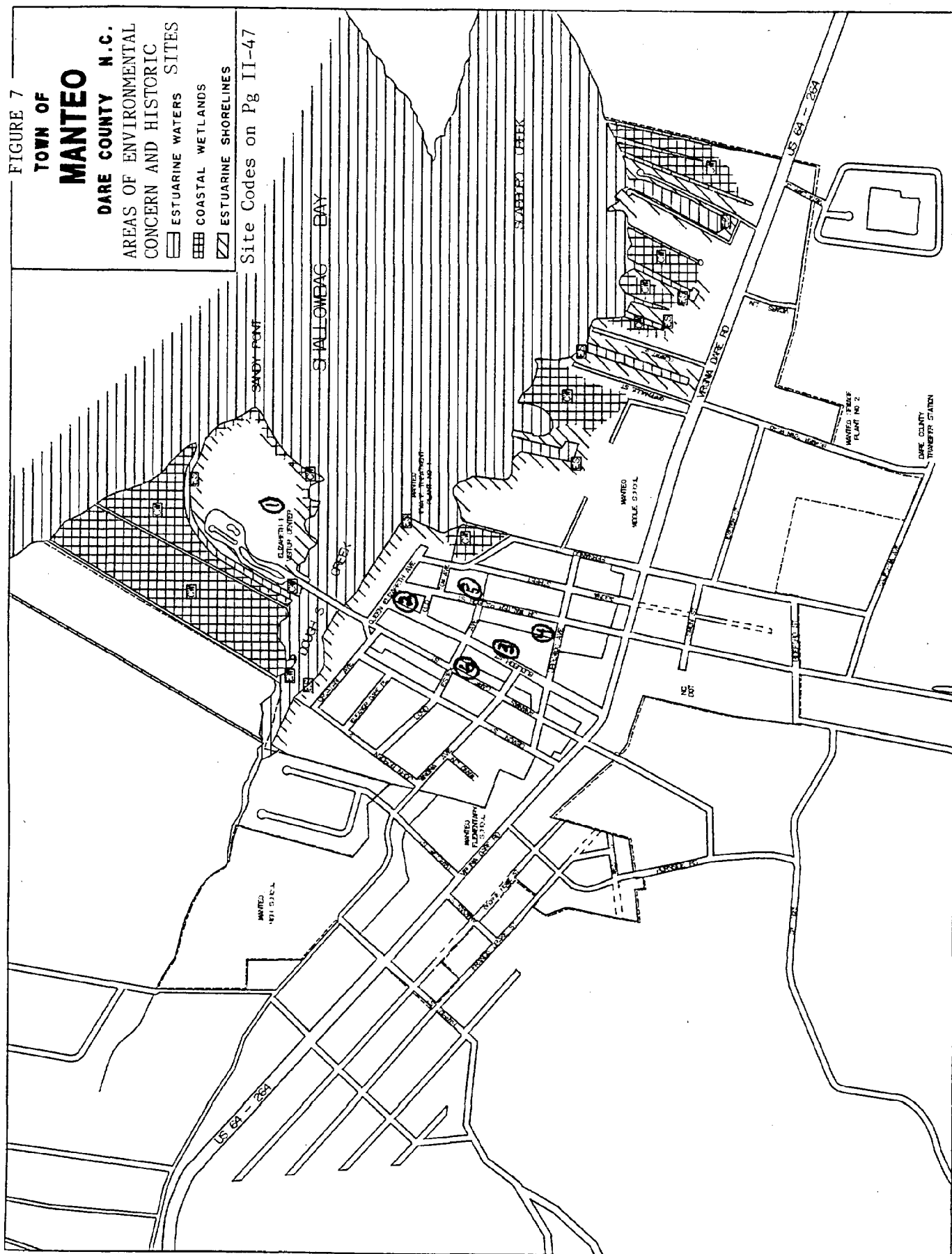
AREAS OF ENVIRONMENTAL CONCERN AND HISTORIC

ESTUARINE WATERS
SITES

COASTAL WETLANDS

 ESTUARINE SHORELINES

Site Codes on Pg II-47



and Community Development filed with the Secretary of State, entitled 'Boundary Lines, North Carolina Commercial Fishing--Inland Fishing Waters,' Revised to March 1, 1965." In the Town of Manteo, this includes Shallowbag Bay and Dough's Creek.

Significance: Estuarine waters are the dominant component and bonding element of the entire estuarine system, integrating aquatic influences from both the land and the sea. Estuaries are among the most productive natural environments of North Carolina. They support the valuable commercial and sports fisheries of the coastal area which are comprised of estuarine dependent species such as menhaden, flounder, shrimp, crabs, and oysters. These species must spend all or some part of their life cycle within the estuarine waters to mature and reproduce. Of the ten leading species in the commercial catch, all but one are dependent on the estuary. Commercial and sports fisheries of singular importance to Dare County are dependent upon the protection and sustained quality of the estuarine areas.

b. Coastal Wetlands

Description: Coastal wetlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricanes or tropical storm tides. Significant marshlands exist on the east side of Dough's Creek and in large areas edging the northeast and southeast boundaries of Shallowbag Bay. There is the notable exception of approximately 20 acres surrounding the Elizabeth II

historic site; near the old Ice Plant site; this area is higher land with pine woods and an open, sandy field. A small, but significant pocket of marshland exists directly southeast of the Agona-Fernando Street intersection. The marshlands are composed mainly of Juncus roemerianus (black needlerush) and Typha spp. (cat-tail).

Significance: The expanse of wetlands bordering the south side of Shallowbag Bay is the northern portion of what is considered perhaps the finest Juncus roemerianus (black needlerush) dominated marshes remaining in the state.

A recent survey taken just south of Highway 64 by the North Carolina Natural Heritage Program (Department of Natural Resources and Community Development), probably applies to the portion bordering Shallowbag Bay. Nearly pure stands of Juncus roemerianus/Eleocaris obtusa cover about 70% of the marsh area. Other communities present are: Eleocharis parvula/Lilaeopsis chinesis in submerged areas, Spartina patens windrows, Pluchea purpurascens/Scirpus supp. on the marsh edge, and the transitional community, Spartina cynosuroides/Scirpus robustus. Loblolly pine/cedar covered hummocks or "Islands" intersperse the marsh.

The Roanoke Island marshlands provide an important resting area for migrating animals and birds going between the mainland and the outer banks. The wetlands lying south of Shallowbag Bay provide important nesting, wintering, and/or feeding grounds for Black Rails, Barn Owls, Least Bittern, Marsh Wren and Clapper Rails.

c. Public Trust Areas

Description: Public trust areas are defined as ocean and estuarine waters plus coastal streams, tributaries and lakes in which the public may have rights of navigation, access or other public trust rights, i.e. all surface waters. In Manteo these include Dough's Creek and Shallowbag Bay.

Significance: The public has rights to these areas, including navigation and recreation. In addition, these areas support valuable commercial and sports fisheries, have aesthetic value, and are important resources for economic development.

d. Estuarine Shorelines

Description: Estuarine shorelines are all shorelines abutting estuarine waters inland 75 feet from high water. These are especially vulnerable to erosion, flooding or other adverse effects of wind and water and are intimately connected to the estuary. Because of its location on Shallowbag Bay, Manteo's future land development needs to be compatible with both the dynamic nature of estuarine shorelines and the values of the estuarine system.

Significance: Development within estuarine shorelines influences the quality of estuarine life and is subject to the damaging processes of short front erosion and flooding.

5. Important Cultural and Historic Areas

Manteo was settled in 1865 and incorporated in 1899. Settlement in the immediate area however extends back well before the colonization of North Carolina. When the first English settlers arrived

on Roanoke Island (circa 1584) they found established Indian communities already in place.

Remnants of very old settlements are very scarce and only a few structures dating to pre civil war days exist on Roanoke Island.

Within the Town of Manteo, the following sites and structures are considered by the State to be important. The numeric code given each site relates to the locations shown on Figure 7 (pg. II-43).

a. Elizabeth II State Historic Site. The focus of this site is a re-creation of the ship which brought the first settlers to Roanoke Island in 1584. This re-creation was constructed in Manteo at the site of the old Creef-Davis boat yard. The Historic Site has a visitor center with museum displays, and the area is open to the public (Site 1).

b. Dare County Courthouse. W. side Queen Elizabeth at Budleigh Street, Manteo. Early twentieth century. Two-story hip roof brick structure, three bays wide by five deep, with a two-tier pedimented porch supported by massive paneled pillars. Wide semi-pilasters, corbeled at the bottoms, suspend from the boxed eaves, divided the end bays. Windows of the first story have segmental-arched heads; those of the second story are semi-circular. Some recent alterations. Determined eligible for listing in National Register - (Site 2).

c. Ben Creef House (also known as George Washington Creef House). 304 Budleigh Street, Manteo. Late nineteenth century. A two-story T-plan board and batten house with ornamented shed porch, intricate shingle and spindle work in gable. Private. Listed on the National Register (Site 3).

d. Theodore Meekins House. 319 Sir Walter Raleigh Street, Manteo. Late nineteenth-early twentieth century. Handsome Queen Anne style house, complex form with shingled gables, rounded corner tower with conical roof. Wraparound porch. Probably the most ambitious residence on Roanoke Island. Private. Listed on the National Register (Site 4).

e. John Evans House. 210 Sir Walter Raleigh Street, Manteo. Late nineteenth century. Two-story gable roof frame house, three bays wide by three deep, hip roof porch on chamfered posts. Typical Victorian interior finish. Shingled roof outbuilding. Private (Site 5).

f. Mt. Olive United Methodist Church. 302 Ananias Dare Street, Manteo. Early twentieth century. An unusual frame church with detached octagonal entrance towers of unequal height flanking the shingled gable front, pointed arch door and window openings. Private. (Site 6)

There are other important structures in the area around Manteo including the so called "Dough" house which is believed to be about the oldest structure on Roanoke Island. Also present in the area are old cemeteries, and battlefield sites.

E. COMMUNITY FACILITIES

Manteo is a built-up urban area with an overall population density (excluding Iceplant Island and the Manteo High School) of about 2,600 people per square mile. The Town is currently served by a municipally owned water and sewer system, County schools, and a State and Town main-

tained street network. Other important public facilities include fire protection (Roanoke Island Fire District), police (town police), telephone (Carolina Telephone), electricity (N. C. Power), storm drainage system (private, city and state), docks and boat launch facilities (town, private, city and state), and medical services (County Emergency Response, (including Heliovac) and private emergency clinic). Most of these facilities, excluding of course the water, sewer and storm drainage systems, the police, and certain park and recreation sites) are completely beyond the Town's control. The Town does not control the actions of the electrical, telephone and cable TV utilities but it has specified the conditions under which new overhead wires can be run within the Town. County level facilities and services such as fire, emergency response and schools are (within certain limits) responsive to the Town's desires. The main emphasis of the Town's management however, and therefore the focus of this section, are the water, sewer, and storm drain systems, and the parking facilities.

Dare County has recently completed a Carrying Capacity Study of all the public facilities in the county and the reader is referred to that for additional information on other facilities and services. It is available for review at the Dare County Offices.

1. Water System

Manteo receives all its potable water from the Dare County Regional Water System under the provisions of a contract originally signed in 1977. The Town's own facilities, three wells and a 200,000+ gpd Treatment Plant were closed in 1979 and have not been maintained since that time.

TABLE 5

COMPARISON OF AVERAGE DAILY FLOWS BY MONTH

1974 and 1975 to 1984 and 1985

Town of Manteo Water System

	DAILY AVR1 CONSUMPTION 1974 (gpd)	DAILY AVR2 CONSUMPTION 1984 (gpd)	% INCREASE 74 - 84	DAILY AVR1 CONSUMPTION 1975 (gpd)	DAILY AVR2 CONSUMPTION 1985 (gpd)	% INCREASE 75 - 85	% CHANGE 84 - 85
JANUARY	88,840	97,710	09	80,840	123,740	53	26
FEBRUARY	90,000	111,650	24	79,210	111,750	41	<01
MARCH	96,160	105,160	09	87,480	130,290	48	23
APRIL	103,000	106,830	03	89,200	142,130	59	33
MAY	114,930	142,230	23	107,030	163,060	52	14
JUNE	130,030	159,200	22	111,930	146,070	30	(08)
JULY	137,640	175,550	27	124,100	207,000	66	17
AUGUST	128,810	170,320	32	123,710	130,130	05	(23)
SEPTEMBER	112,000	115,070	02	110,530	136,370	23	18
OCTOBER	101,580	127,930	25	99,870	142,100	42	11
NOVEMBER	102,370	133,330	30	91,430	136,770	49	02
DECEMBER	92,220	119,290	29	97,800	108,550	10	(09)
ANNUAL TOTAL	39,446,400	47,755,000	21	36,575,150	51,117,000	39	07
DAILY AVR	108,072	130,836	21	100,206	140,047	39	07

Sources: 1. Water & Sewer Feasibility Study, Town of Manteo, Andrews, Miller & Associates, Jan. 1976.

2. Town of Manteo Records.

The water purchased from the County is pumped from the County treatment and storage facility near Midway through a 12" water main to the Town's 75,000 gal. elevated storage tank at the old water plant site on Fernando Street (Figure 8). The County's supply is limited by the pumping capacity of its wells to 5.5 MGD and Manteo is allocated 400,000 gpd of this amount.

Table 5 shows the amounts of water purchased by Manteo from the County during calendar years 1984 and 1985 and compares these amounts to what was used in 1974 and 1975. Certain things are apparent from these data.

- ° Water use in Manteo is seasonal. Average daily water purchases in July 1985 (207,000 gpd) are roughly twice the purchases in February 1985 (112,000). There is a clear increase in summer water use in both 1984 and 1985.

- ° Metered monthly water purchases fluctuate significantly. The variance between water use in July 1985 and August 1985 (59%) and between August 1984 and September 1984 (48%) appears too great to simply represent a slack off in demand. Several things could be occurring which would accentuate the impact of a change in use, including: errors in the meters, errors in the meter reading and change in meter reading date. These factors should be investigated. It is interesting to note that if July and August 1985 are averaged, the result is around 168,500 gal. per day. This is a more realistic figure for both months, especially when compared to the use in 1984.

- ° Water purchased increased significantly between 1984 and 1985. The average amount purchased in 1985 was up by about 10,000 gal per day

FIGURE 8

TOWN OF

MANTEO

DARE COUNTY N.C.

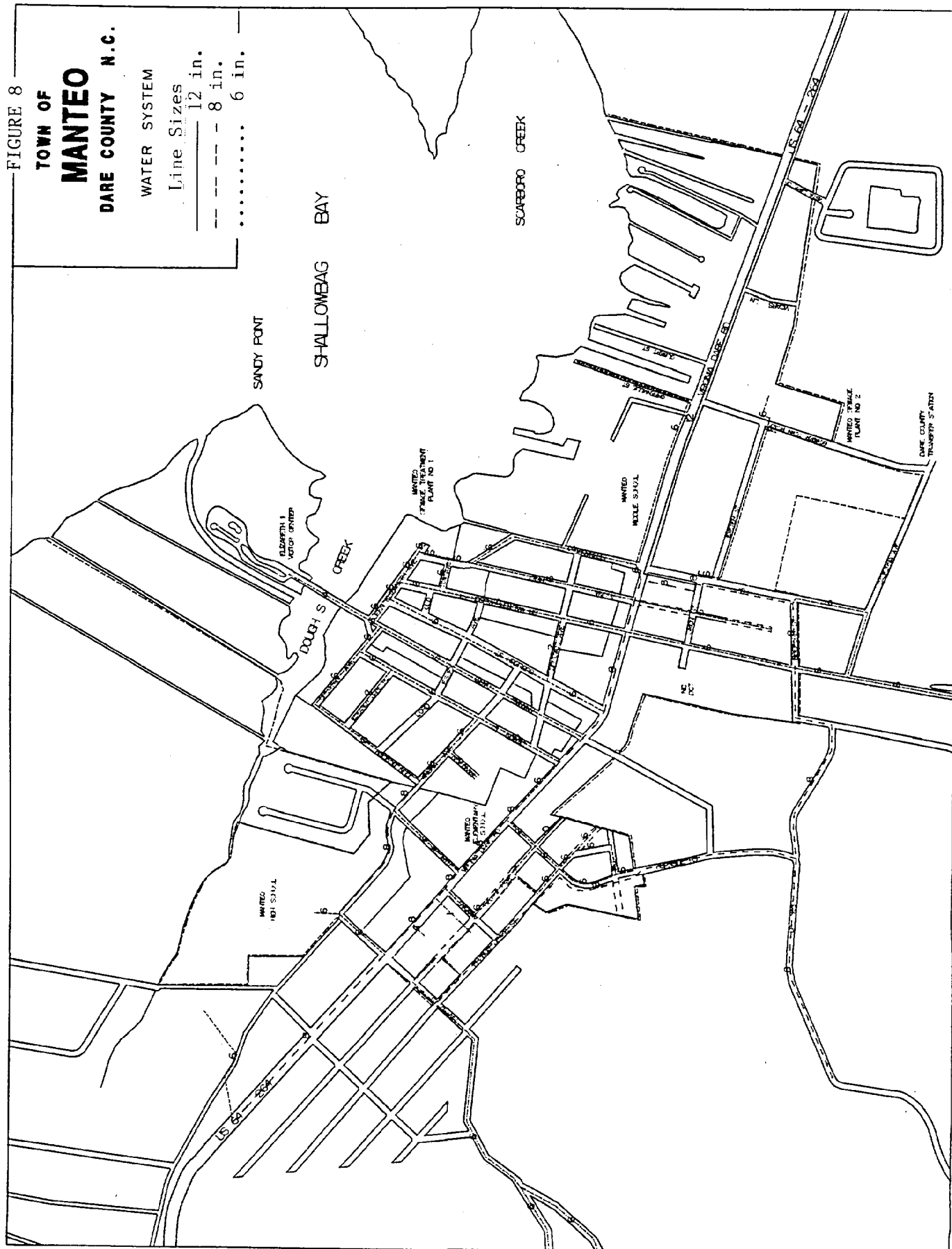
WATER SYSTEM

Line Sizes

— 12 in.

- - - 8 in.

..... 6 in.



from 1984. Assuming an average use rate of 130 gal per person per day, this increase would be sufficient to supply about 70 additional people. The permanent population did not increase by that much so the increase is believed attributable--at least in part--to new commercial/industrial demands.

° Water purchases are significantly less than the contractual limit. Manteo is limited to a maximum demand on the county system of 400,000 gpd. Current peak demand is believed to be about 180,000 gpd--derived by adjusting the 1985 peak downward to more accurately reflect the trend lines. Even assuming a peak demand of 207,000 gpd, Manteo has ample water available. Projections of future demand are contained in a following section.

The major problem faced by Manteo with respect to its water system appears to be in the distribution system. There are no records of exactly when most of the water lines in the older part of the system were installed but the report cited previously (Andrews, Miller & Associates, 1976) states on page 3.6 that the system is (or was at that time) over 30 years old.

The Town's utility staff feels that while the system is in reasonably good condition and, not leaking significantly, there are some questions about sizes of lines and low flows in certain areas. Additionally, maintenance on the lines is an almost constant operation and there appears to be a general consensus that long term planning to replace the distribution system in the downtown area ought to begin.

Figure 10 shows the existing water distribution system as far as it is known.

2. Manteo's Sewage System

The Town of Manteo contains the only community wide central sewage collection and treatment facility in Dare County. At this point (Jul. 1986) sewage is collected and treated at either the Town's 250,000 gpd discharging treatment plant (Plant 1), or at the recently (May 86) opened 125,000 gpd plant located west of Hwy 64-264 on Bowser Town Road. This plant discharges to a rotary distributor, land disposal system.

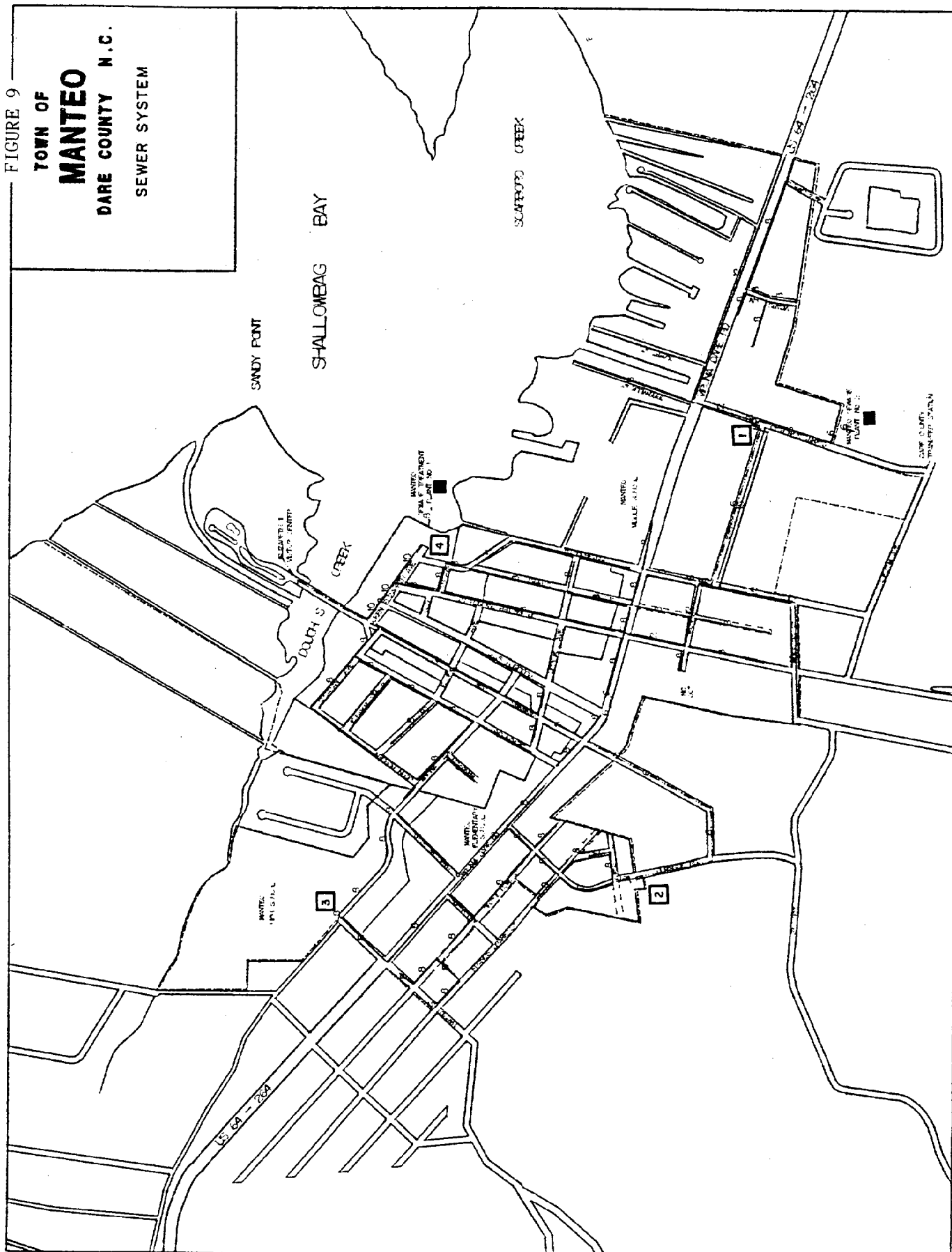
On an average flow basis the old treatment plant was operating within its capacity and based upon the monitoring done by the Town's operators, the plant was and is treating the wastewater to a high degree and discharging effluent well above the treatment requirements of the current discharge permit. Problems did exist on a peak flow basis however and the monitoring data indicate that the plant was occasionally overloaded. The new plant has eliminated this problem.

A detailed study of the Town's sewerage system was undertaken by an engineering consultant in 1975. At that time the entire sewered area of the Town was east of 64-264 between John Borden Street and Fernando Street. The system flowed by gravity from 64-264 to a pumping station at Queen Elizabeth Avenue. All of the system was 8" clay pipe except for Queen Elizabeth Avenue where 10" pipe was used. The current sewer lines in the downtown area have been in place since approximately 1930.

As a result of the study cited above and to serve the areas annexed by the Town in 1979, new sewer lines and pumping facilities were installed. These serve the areas along 64-264 and west of the highway.

FIGURE 9

TOWN OF
MANTEO
DARE COUNTY N.C.
SEWER SYSTEM



These areas are sewered with pipe of varying sizes and 3 pumping stations lift the sewerage into the existing gravity flow system. Figure 9 shows the features of Manteo's existing sewerage collection, treatment and disposal system.

Since the new plant has become operative, flows are being pumped to it from some parts of the system. The Town plans to eventually treat all sewage by a land disposal process and to remove all discharges from the Bay.

The average daily metered flows to the sewerage treatment plant for the year 1985 are shown on Table 6 and Figure 10 and are compared to the reported average daily water use during the same period. Several conclusions can be drawn from this information.

- ° Sewerage generation generally follows the same trend noted for water consumption in the previous section. It tends to rise in the summer and go down in the winter.

- ° This trend however is nearly obscured by the violent fluctuations in flows observable in February, August, and November. These fluctuations are believed attributable to infiltration into the sewer system caused by rain and surface flooding. In November, for example, sewage flows averaged 209,000 gpd while water use averaged 133,970 gpd, a 56% difference. During that time, heavy rains struck the area and the majority of the sewer system was under water.

As part of the 1975 study a detailed infiltration/inflow (I/I) study was done and at that time I/I was estimated to amount to an average of

TABLE 6

WATER CONSUMPTION AND SEWAGE GENERATION

By Month - 1985

Town of Manteo, North Carolina

	Total Water Consumption (gal)	Ice Plant Water Usage (gal)	Water Cons. Excluding Ice Plant (gal)	Average Water Use (gpd)	Average Sewage (gpd)	Difference (gpd)	Difference %
JANUARY	3,836,000	52,000	3,784,000	122,060	82,000	40,060	(32)
FEBRUARY	3,129,000	90,000	3,039,000	108,540	156,000	47,460	43
MARCH	4,039,000	142,000	3,897,000	125,710	121,000	4,710	(03)
APRIL	4,264,000	313,000	3,951,000	131,700	114,000	17,700	(13)
MAY	5,055,000	324,000	4,731,000	152,610	126,000	26,610	(17)
JUNE	4,382,000	359,000	4,023,000	134,100	138,000	3,900	02
JULY	6,417,000	424,000	5,993,000	193,320	189,000	4,320	(02)
AUGUST	4,034,000	556,000	3,478,000	112,190	204,000	91,810	81
SEPTEMBER	4,091,000	212,000	3,879,000	129,300	141,000	11,700	09
OCTOBER	4,404,000	179,000	4,225,000	136,290	129,000	7,290	(05)
NOVEMBER	4,103,000	84,000	4,019,000	133,970	209,000	75,030	56
DECEMBER	3,365,000	37,000	3,328,000	107,350	131,000	23,650	22
TOTAL 85	51,117,000	2,722,000	48,345,000	132,260	145,000	12,740	09

Source: Town of Manteo Records

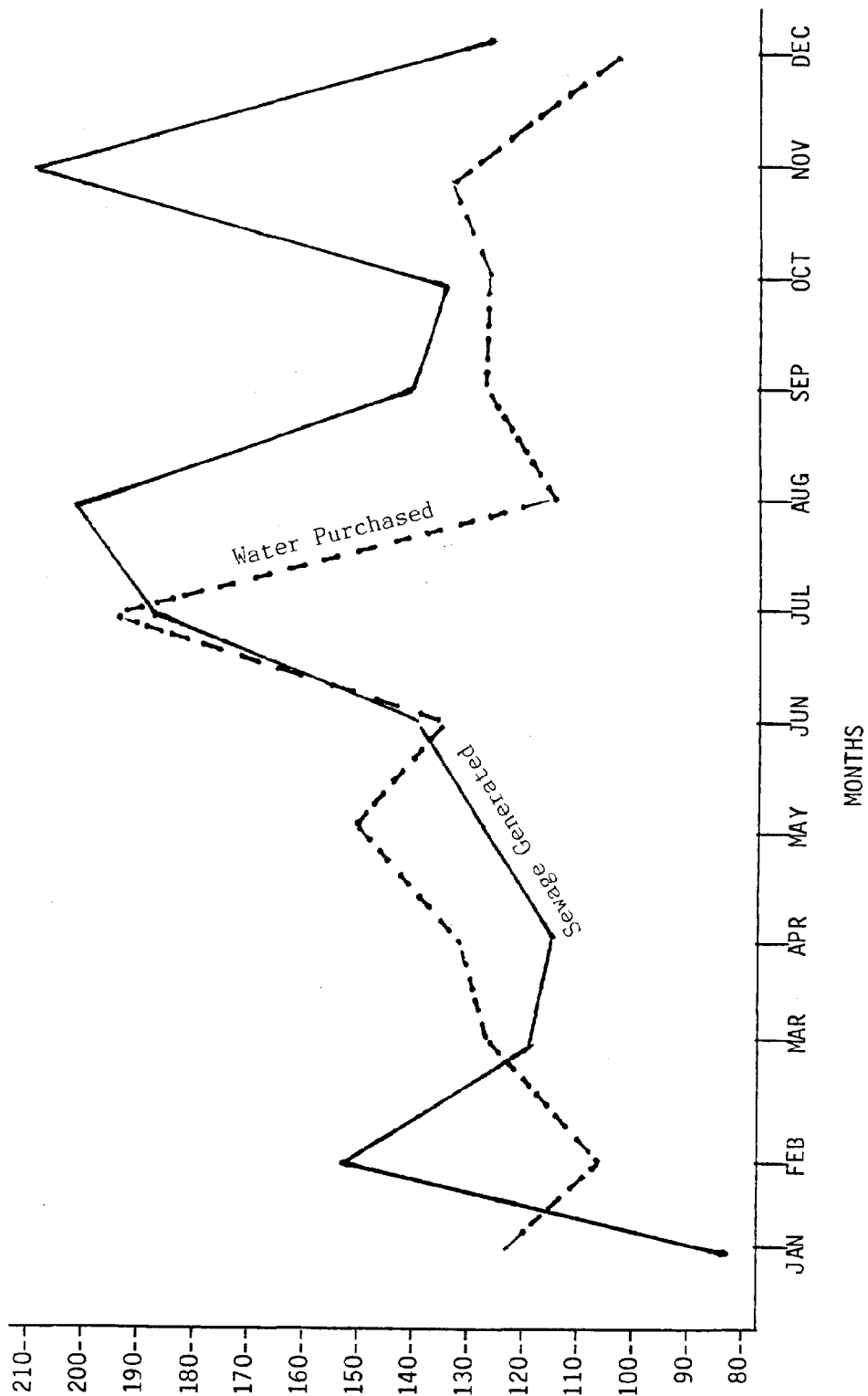
FIGURE 10

COMPARISON OF AVERAGE DAILY WATER PURCHASED AND SEWAGE GENERATED

IN GALLONS PER DAY

1985

Manteo, North Carolina



Source: Town Records

84,000 gpd. Despite these apparently high flows, the study, using EPA guidelines, found that it was more cost effective to continue to transport and treat these flows than it would have been to rehabilitate the sewer system. Since that time the Town has undertaken some repairs of the system, particularly in and around manholes and this has served to eliminate many of the most obvious leaks. It is hard to imagine however, any upgrade that could eliminate I/I from events such as storm related flooding. Based on the flow data, I/I is considered to still be a significant problem for the Manteo sewerage system.

3. Storm Drainage System:

Manteo's storm drainage system is a combination of drainage ditches and underground drainage lines which move storm water with varying degrees of success to either Dough's Creek/Shallowbag Bay or to Croatan Sound. Highway 64/264 is the approximate divide between the two major drainage basins.

A stormwater management plan was prepared for the Town in 1982. This plan described the existing system and made recommendations for procedures and technical actions which the Town could take to improve the storm drainage system.

Stormwater management is important in the Manteo area for two reasons. First, the Town is very low, and slopes are flat. Heavy rains, which are not infrequent, tend to drain slowly and this creates hazards and inconveniences for everyone. Second, most of the storm water drains directly into either Dough's Creek or Shallowbag Bay and this can create significant water quality problems.

The Stormwater Management Plan concentrates on a description and a definition of solutions to the first problem. In general, these solutions are directed towards improving drainage and increasing the rate at which water can drain off into the Creek, the Bay, and the Sound. While onsite retention and infiltration are mentioned as possible solutions, the report does not address them in any practical way. It does however, identify and discuss the characteristics of the various soils within the Town and as shown on Table 1 and Figure 3 of this report, the Town is dappled with soils which have poor drainage characteristics.

Unfortunately, improving and increasing the stormwater runoff to the Creek and the Bay serves to exacerbate the second problem. No data has been found which describes the quality of Manteo's stormwater.

4. Streets and Parking

Manteo is an old and densely settled community and its basic site plan--particularly of the downtown area, was set before there were the number of automobiles there are today. Furthermore, the Town's emphasis on tourism creates traffic and parking demands which are different than those which existed before. Circulation and parking therefore are issues which need attention particularly as the Town pursues its emphasis on tourism.

The traffic and parking needs of the downtown Manteo area were extensively studied in 1980 by the North Carolina Department of Transportation. Their report entitled Manteo Traffic Operations and

Parking Study 1981 is an unusually complete and helpful document. Town officials should carefully review it and should implement as necessary, the recommendations contained therein. The report's discussion of streets and circulation is still quite valid and, therefore, instead of repeating that here, the reader is referred to that report.

The parking situation has changed somewhat since the report was written although most of the technical detail and recommendations are still valid. The Town's decision to undertake active re-development of the entire waterfront resulted in the elimination of some public parking spaces which the report addressed and, before it is complete, will result in the elimination of some more.

An inventory of parking spaces in the downtown area was performed and the results are as follows. This discussion covers the Area E of Uppowoc between Annanias Dare Street and Fernando Street out to and including Iceplant Island.

a. On-Street Parking: There are approximately 256 spaces available for on-street parking in the area concerned. In general, the spaces east of Lord Essex Avenue are usually full and those west of Lord Essex are frequently empty. It is reported that downtown employees capture these spaces early in the morning and park in them all day. Aside from the spaces in front of Town Hall, there is no signage limiting parking times. Some of the spaces (Queen Elizabeth Avenue for example) are unmarked.

b. Off-Street Parking: There are currently about 375 off-street parking spaces in downtown Manteo of which about 60 are

"developed" public parking. More than 80 of these (none developed "public") lay west of Lord Essex Avenue and in the area east of Lord Essex, 80 of the available spaces are used informally. At least 40 of these will disappear when construction starts on the lot across from the post office. This is the most popular parking area in Manteo and its loss will complicate the downtown parking problem considerably.

The County maintains a large lot adjacent to the County Office Building (about 50 spaces) but these are quickly filled and many of them are reserved. The "waterfront" development has about 50 spaces underneath and 16 of these are dedicated for public use. The structure contains 34 residential condominiums and 14 office/retail spaces, however, and clearly when these are full, additional parking will be required for residents, guests, employees, and customers.

There are some vacant lots in the downtown area which could be improved for parking.

c. Parking at Iceplant Island: There are 174 regular spaces and 16 pull through spaces at the State Historic Site on Iceplant Island. The State has indicated its willingness, at least in the short run, to allow use of these spaces by downtown visitors and employees. Very little of this use presently occurs and it is felt that the distance (about 200 yards from the courthouse) is perceived as simply being too far.

5. Schools

The following information is taken directly from the Report: Dare County Carrying Capacity Study, Nov. 29, 1985 prepared for the County's Carrying Capacity Commission by Booz, Allen & Hamilton, Inc. This report looks at the current capacities of a wide range of county and municipal facilities in Dare County, including the school system.

"Public Education in Dare County is a countywide function under the direction of a five person, elected Board of Education and administered by an appointed superintendent. Five school facilities provide educational programs for grades kindergarten through twelve as well as several special education programs. The five schools are:

	<u>Grades</u>	<u>Capacity</u>
Kitty Hawk Elementary	K-5	440
Manteo Elementary	K-5	638
Manteo Middle	6-8	440
Manteo High	9-12	616
Cape Hatteras	K-12	725

Manteo High School and Manteo Middle School are operating above their rated capacity. Manteo Elementary School is operating below capacity. (All above is from page 66 of the Carrying Capacity Report).

None of the schools listed above serve only Manteo residents. All are to one degree or another impacted by the explosive growth taking place principally on the Beach areas of Dare County.

The County Board of Education is currently embarked on a program to address the overcrowding in the area's school system.

III. FUTURE CONDITIONS

The purpose of this section is to project future conditions in the planning area and to define the type and capacities of the public facilities needed to support the projected growth. Population projections form the basis of any analysis of future conditions, and since the future population will vary based upon many factors, this report presents a projection based upon several specific assumptions. It must be understood that the actual population or economic conditions which exist in 1995 may be quite different.

Population projections are by necessity only educated guesses. As explained in the next section, many variables will combine and interact to determine the future population of Roanoke Island and the Island's population will be a significant determinant in the future population of the Manteo area. The projection process is especially difficult in this situation because of three factors.

- ° The growth of Roanoke Island in the future will bear no relationship to what happened between 1970 and 1980. Completely different forces will be at work. That means that no trendlines can be used to make judgements.

- ° Since Manteo is so fully developed, significant future growth will depend either on the redevelopment of currently subdivided (but undeveloped) land, or upon annexation of adjacent county areas. Both of these policies are complex and fraught with uncertainty.

- ° Existing information on population outside the Town's limits is general and it is therefore difficult to estimate the current and future population in nearby areas.

Despite these difficulties, projections have been made. They are certainly subject to discussion and amendment. Hopefully, by keeping the assumptions clearly defined, the development of alternative projections, should others care to undertake them, will be made easier.

A. PROJECTIONS OF FUTURE GROWTH

1. Factors Affecting Future Population Growth:

Population and economic growth in and around Manteo will be a function of overall growth on Roanoke Island and this will be a function in large part of what happens in the County as a whole.

a. Growth of Dare County:

Dare County's growth is tied to several factors but principally to its continued appeal as a vacation, second home, and retirement destination. Specific factors which will likely affect the county's growth include:

- 1) the continued population growth and economic prosperity of the Norfolk, Va. metropolitan area and generally of the northern metropolitan areas from which come most county visitors, retirees, and second home owners;

- 2) the continued population growth and economic prosperity of northeastern North Carolina. This is much less important a factor than the one cited previously since only a small percentage (less than 20%) of the county's visitors, homebuyers, and retirees come from North Carolina;

- 3) the continued appeal of the county as a destination for retirees;

4) the ability and willingness of the county and its municipalities to provide urban services and to preserve the natural amenities and quality of life which is attracting new residents and visitors;

5) the continued availability of a variety of affordable land and housing.

The county's growth could also be affected by non-tourist related factors and some of these include:

6) the stabilization of Oregon Inlet. This, if accomplished, could lead to increased fishing related activity and boat building. Some increase in tourist related offshore fishing could also occur; and,

7) an increase in industrial development on the mainland including mining, power generation, boat repair, and farming.

The stabilization of the inlet and any potential mainland development will have some growth inducing effects, particularly on Roanoke Island, but these will probably not compare to the impact of the continued growth of the tourist industry.

b. Growth on Roanoke Island:

Growth on Roanoke Island will be tied primarily to tourist related growth in the county as a whole. Whereas the county's growth from 1970 to 1980 occurred almost exclusively on the beaches and bypassed Roanoke Island, there are indications that future growth will include Roanoke Island. The following factors will likely be important:

1) because of the rapidly increasing cost of land and housing on the beaches, Roanoke Island may become an area where many of the county's service employees live;

2) Because of the generally protected nature of Roanoke Island, there may be an increasing tendency to view it as a site for more of the county's major commercial development. The attitude of flood and hazard insurance carriers will be important in this respect;

3) at the northern end of Roanoke Island there are several large parcels of undeveloped land which have been mentioned as the possible site of one or more large resort type developments;

4) Roanoke Island offers a distinct contrast to the beach areas of the County; it is green, shaded and generally quiet. These factors will serve to make it increasingly popular as a location for more permanent and stable development;

5) there appears to be a movement toward making Roanoke Island the historical and cultural center of northeastern North Carolina. As this movement progresses, it could have a slow but steady impact on the island's growth; and,

6) if Oregon Inlet is stabilized the associated growth at Wanchese will increase growth pressures throughout Roanoke Island.

c. Factors Affecting Growth of Manteo.

If the County continues to grow, the associated growth on Roanoke Island will increase growth pressures within and adjacent to the existing boundaries of Manteo. Whether the town captures some of this growth will depend on its own actions.

Some significant amount of the growth pressure will be for commercial development. Most of this will generally seek frontage on Highway 64/264. A market may slowly develop for downtown commercial development

but this will require careful cultivation by the Town and the business community.

An increasing amount of demand will occur for residential development, particularly among low and moderate income people, many of them young. Because of land cost, this development will necessarily be either multi-family or densely packed mobile homes and will therefore almost certainly demand water, sewer and other urban services. Manteo has those services available. The growth of Manteo therefore will depend upon the following general factors:

- 1) the growth of the County as a whole and specifically of Roanoke Island.
- 2) within the current town limits, the policies of the Town relative to the development of currently vacant land and the redevelopment of currently subdivided but vacant or underutilized land;
- 3) the willingness of the Town to keep pushing for attractive tourist oriented commercial development in the downtown area and its commitment to make the necessary investments in support services, particularly parking;
- 4) the attitude of the Town relative to annexation;
- 5) the willingness of the County to limit highway commercial development to the already developed area; and,
- 6) the willingness of the County to strictly enforce the current septic tank ordinances.

In a general sense, Manteo stands at a crossroads. It is the only true urban community in Dare County and it is located in an area where

growth pressures should increase significantly over the next decade. It has the urban services in place and it is an interesting and appealing community, but it has very little vacant land. To benefit from the forthcoming growth, the community must develop a generally shared vision of what it wants, must devise a general strategy for getting it and then must be aggressive in implementing the strategy. A failure to do these things will mean that the Town will always be reacting to things and never in control of its own destiny.

2. Projection of Population Growth

As mentioned above, because of rapidly changing conditions and the lack of a good data base, projections of population for the area in and around Manteo are not easy to make. This report will attempt to bypass these problems by projecting future population within certain ranges and by being specific in the assumptions being made.

a. Projection of Permanent Population

The current area of Manteo is nearly completely developed. An analysis of vacant residential land indicates that about 20 lots remain undeveloped in the downtown area and about 90 lots remain undeveloped in other parts of Town.

The downtown lots vary in size, in current use and in zoning. Given these factors, it is hard to imagine more than 10 dwelling units being constructed on the vacant land in the downtown area. This excludes the downtown waterfront area parcels designated for multi-family development.

The lots undeveloped elsewhere in town are clustered in three areas: between Fernando and Sir Walter Raleigh streets west of Highway 64/264

(about 25 lots on about 3 acres), between Burnside Road and Harriot Street west of 64/264 (about 18 lots on about 2 1/2 acres)¹, and in the Bayview subdivision (about 15 lots on slightly less than 2 acres south of the canal). There are several other lots scattered at various places around town. The majority of these lots are around 6,000 square feet, 1,500 square feet smaller than the minimum lot size (7,500 square feet) provided for in the current zoning ordinance. The ownership of the lots has not been researched and it is of course possible that many owners own two or more lots.

There is some remaining unsubdivided land in Manteo. About eight acres appears to be available adjacent to the Baytree/Harbortown development and some smaller parcels exist behind currently developed lands between 64/264 and the Marsh along Shallowbag Bay.

There are still about eleven undeveloped lots with frontage on 64/264 but some of them are fairly small and may be unusable for commercial purposes. There are also a few odd shaped vacant parcels in the downtown commercial area which are potential development or parking lot sites.

In general however, most land in Manteo is developed and this means that new development must either limit itself to the available subdivided or open parcels or that some efforts must be made to begin the process of redevelopment.

The following projection is based on a specific set of assumptions. The projection assumes a build out of Manteo by about 2000 with most

¹Only 9 of these lots are within the current city limits but any redevelopment would likely take place across the whole area.

development utilizing the available lots but also that some redevelopment efforts are undertaken which clear the way for a significant increase in multi-family dwellings. The population projections are shown in Table 1 and a more detailed discussion of the assumptions follows.

TABLE 7
POPULATION PROJECTIONS
Manteo, North Carolina

<u>Year</u>	<u>1970</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Population	547	902	1000	1200	1400	1600

1. 1970 to 1980 growth due to annexation.
 2. Projections are for existing city limits.
-

The assumptions which govern the projection are as follows:

- 1) Multi-family developments constructed or under construction in 1985/86 will be completed and will fill up.
- 2) Approximately 100 undeveloped residential lots remain in Manteo.
- 3) Approximately 50 of these lots are developed as they exist; as single family homes with an average family size of 2.3 persons per home.
- 4) These lots are developed at the rate of about five per year meaning that by 1990 25 lots, and by 1995 all fifty lots would have been developed.

5) Eight acres of vacant land are developed as townhouses/condominiums or apartments. These are developed in accordance with the zoning ordinance at about 5.8 units per acre (7,500 sq. ft. MLS). This development results in 60 new people by 1990 and 106 new people by 1995.

6) The remaining vacant lots as well as some of the remaining open land is developed/redeveloped into multi-family units. This results in a built out population of about 1600 people within the current city limits.

b. Future Temporary and Visitor Populations

The previous section mentioned the difficulties involved in estimating the current number of temporary residents and visitors in Manteo. These same difficulties make the task of estimating future visitors and temporary residents even more difficult. It is impossible to predict what new attractions may draw summer visitors to the Manteo Area: a major art center, new resorts with golf courses, a large mall type commercial center, or the development of downtown Manteo into a "chic" tourist shopping area. These are all things that have been mentioned as either desirable or possible developments. For the purposes of this projection it shall be assumed that the current attractions (Ft. Raleigh, Elizabeth II and the N. C. Aquarium will continue to be the primary drawing card. Additional assumptions include:

1) Attendance at the Elizabeth II could increase so that by 1990 it might be equal to the other two attractions;

2) attendance at the three major attractions will increase slowly (2.4% per year) based on the average annual change in attendance between 1981 and 1985.

3) Available motel rooms in Manteo will increase from 170 today to 200 by 1995;

4) these motel rooms are not used as destination type resorts but instead as commercial or short term lodging and therefore average room occupancy is 2.5 people per room;

5) any other temporary lodging areas such as campgrounds will occur outside Manteo's Town limits. Manteo will maintain itself as a permanent residential community with only a minimum number of seasonal residents.

TABLE 8
PROJECTED TEMPORARY AND VISITOR POPULATION
Manteo Area

Indicator	Year	1985	1990	1995	2000
Number of Motel Rooms (Total)		170	220	250	300
In current Town Limits		170	200	200	200
Peak Daily Population		425	500	500	500
Visitation at Elizabeth II					
Annual Population		136,630	342,400	383,500	429,500
Average Day in Peak Month		1,003	2,200	2,500	2,800

Table 8 shows the projected temporary and visitor populations for the years 1990, 1995, and 2000. These projections indicate that if the assumption is correct concerning the drawing power of the Elizabeth II, then a very significant number of visitors will be passing through

Manteo to Ice Plant Island. Assuming 3.5 persons per car, the peak day traffic to the Elizabeth II site would be 631 vehicles in 1990, 707 in 1995 and 791 in 2000.

The increasing visitation will add to the traffic congestion already present on 64/264, and this will be exacerbated by the general increase in population in the area.

B. NEED FOR LAND

As discussed in the previous sections, Manteo is essentially fully developed. All land within the current Town limits has access to urban services, and with the exception of marshland areas near Shallowbag Bag, all land is classified as "developed" (see Section V). Manteo's growth occurs, of course, within the context of Roanoke Island and Dare County as a whole. The most recent projections for Dare County anticipate significant growth by 1995. Some small percentage of these new people will settle in Manteo and a large number are expected to settle on Roanoke Island. In the policy section, this plan addresses the issue of whether Manteo should pursue annexation.

C. DEMAND FOR URBAN SERVICES

As discussed in the section on Existing Conditions, the Town of Manteo provides basic urban services within its corporate limits including water supply, sewage collection and treatment, solid waste collection, and police protection. Fire protection and schools are services provided at the regional or county level and most roads and streets are now on the state system and are therefore not technically the Town's responsibility.

This section of the report makes a generalized projection of the need for several basic urban services based on the projection of population presented in the previous sections. While assumptions and considerations regarding individual areas of service are presented with each area, there are certain basic points which address the provision of these services in general.

First, it is an inescapable fact that as Roanoke Island grows from now on, its fundamental character will begin to change. Heretofore, the Island, except for Manteo, Wanchese, and certain small areas, has been primarily rural. Housing densities have been low and the need for urban services has been limited. If population growth approaches the levels predicted, major changes will occur.

In the areas immediately adjacent to Manteo, the current population is about 1400 people and the average density is about 1 person per acre of "developable" land. If all the currently subdivided lots are built on (about 1250) the population would be about 2900 people. If all the available land is subdivided to 1/4 acre lots (10,900 sq. ft.) and developed, the potential population is about 9000 people. It should be noted that most currently subdivided lots are in the 6000 to 8000 sq. ft. range.

This density of development will require central water and sewer service if serious environmental and public health problems are to be prevented. Streets will need enlargement and upgrading. Schools will need enlargement, solid waste facilities, fire, police, recreation and water access sites, social services, all will need to expand to serve

the prospective population. In short, based simply on the degree of subdivision of land which has already occurred near Manteo on Roanoke Island, there is a medium sized city waiting to be born. And furthermore, if the projections of future population growth are correct, the people to populate that city will in fact be moving to the area over the next 10-15 years.

Second, it is important to note the way that urban services are provided, and the way that they are paid for. Some services, such as police, fire, and solid waste are relatively easy to expand on an incremental basis and while capital expense may be an issue, it is not normally an insurmountable problem. Other services however, particularly schools, roads, water, sewer, and drainage are very capital intensive, at least to establish. Most communities place the burden for initial financing of these--particularly water lines, sewer lines, and collector streets--on the developers and subdividers. However, in the area around Manteo, a great deal of subdividing has already occurred. Most has been done without the provision of any of these basic infrastructural components, and therefore, as the need for paved streets, drainage systems, water lines, and sewer lines in these areas becomes apparent, the financing of these improvements will prove expensive and complex to arrange.

This section looks in some detail at the projected increase in water and sewer flows within the current town limits of Manteo. The section also discusses the potential traffic problems within Manteo connected with future growth and the potential impact on schools of the growth in the Town.

1. Future Demand for Water and Sewer Service

As discussed in the Existing Conditions Report, Manteo currently operates its own water and sewer systems. Water is purchased from the County and distributed by the Town's distribution system and sewage is collected and treated by the Town, and a portion of the effluent is discharged to Shallowbag Bay. The Town is limited by its contract with the county to a maximum of 400,000 gpd of water and its older, discharging sewage plant has a capacity of 250,000 gpd. This has recently been augmented by a new plant with a capacity of 125,000 gpd which discharges to a rotary distributor land disposal system.

This discussion deals with peak level demands for water and sewer service which could be expected to occur on any given day between Memorial Day weekend and Labor Day weekend. Because the systems have to be designed to accommodate the peak demands², these are the basic figures which are used for planning purposes. It should be understood that average annual flows are usually significantly less than peak flows and that winter flows are normally significantly less than average flows. This burden of sizing for very high summer time peak flows is shared by most summer resort areas, and can place an extra cost on permanent residents.

The peak water demand is derived by considering three classes of users; permanent (or semi-permanent residents), temporary residents (in

²Accommodation of peak sewage flow usually consists of the provision of some storage capability which allows for the treatment of the peak loading during times when normal flow is below capacity. The capacity to meet peak water flows however, must be on line and instantly available.

motels), and day visitors. The projected populations of these three classes are taken from Tables 7 and 8 in this report.

The rates of peak consumption are assumed to be 135 gpd per permanent resident, 70 gpd per temporary resident and 15 gpd per visitor. The later two are taken from the Dare County Carrying Capacity Report and the first is derived from the 1985 Manteo peak water demand (estimated) less the amount attributed to temporary residents and visitors. While the residential peak flow is somewhat higher than that often used it includes an increment to account for commercial flows.

Sewage generation rates are assumed to be the same as water demand rates. However, for Manteo, an increment of 40,000 gpd has been added to account for Infiltration/Inflow into the sewer system. As discussed in the section on existing conditions, this is believed to be a significant problem in the Manteo sewer system. It should be noted that the N. C. Division of Environmental Management requires that when designing a sewage system, a minimum of 150 gpd per bedroom be used and that when designing community water systems, a design flow of 450 gpd per dwelling unit be used.

TABLE 9
PROJECTED PEAK DEMAND FOR WATER AND SEWER SERVICE
TOWN OF MANTEO, N.C.¹

<u>SERVICE</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
Water ²	180,000	230,000	261,000	293,000
Sewer ³	220,000	270,000	300,000	333,000

Notes:

1. Figures are for areas within 1986 Town limits.
2. Peak water demand figures are: 135 gpd permanent residents, 70 gpd for motel residents and 15 gpd for visitors.
3. Sewage flow equals water demand plus 40,000 gpd to account for I/I.
4. Peak sewage flow is not normally basis for plant size.

Based on an analysis of the 1984 and 1985 figures, it is estimated that the peak day water demand in Manteo in 1985 was about 180,000 gpd. This is less than the average daily demand in July 1985 but it is felt that the July figures are open to dispute. The sewage flow averaged 204,000 gpd during August 1985 and for the purposes of this analysis, the peak day will be estimated as 220,000 gpd. As discussed in the previous report, winter storms in 1985 probably generated a much higher peak flow but from a planning standpoint, such an anomaly will not be considered.

Using the flow rates and the population projections discussed previously, water and sewage demand within Manteo's existing town limits

were projected. The results are shown on Table 9. Assuming the population growth and the use rates discussed previously, peak water demand rises to about 293,000 gpd by 2000. Sewage flows increase to about 333,000. These projections would indicate that the town has adequate water supply and sewage capacity to deal with future growth in the existing service areas.

2. Potential Need for Road and Street Improvements:

Manteo has three main areas in which some long term planning is necessary with respect to streets, roads and parking. These are as follows:

a. Highway 64/264: This major thoroughfare serves as the main entrance to Roanoke Island, Manteo, and the beach areas from the west. It also provides access to the Manteo and Roanoke Island attractions from the beach areas, and additionally serves as the major thoroughfare and commercial access street for the Town and Island's permanent residents and businesses. Average Daily Traffic (ADT) on this highway in Manteo was estimated by NCDOT as 11,900 vehicles per day in 1984, up from 8500 vehicles per day in 1981. As the County and Roanoke Island continue to grow, the traffic and congestion on the highway will increase. There is no other feasible corridor available for a highway on the Island and therefore, the State, the Town, and the County must plan carefully and make improvements to minimize, in so far as possible, the inevitable future congestion.

b. Town street access to Elizabeth II and downtown area: The current signing on 64/264 directs visitors to the Elizabeth II and

Downtown to enter the downtown area via Fernando Street and the logical exit street is Ananias Dare Street. Neither of these streets is especially wide, all have street side parking and are largely residential. Assuming 3.5 persons per vehicle, year 1995 peak day traffic to the Elizabeth II would exceed 700 vehicles per day by 2000. This traffic will be exacerbated by the increasing Post Office traffic, other local residential/business traffic and any traffic generated by other tourist/commercial development downtown. In the long run, the town will have to commit certain streets to this traffic and plan for their widening and the associated land use changes sure to occur.

c. Downtown parking:

As discussed in the previous section, public parking in downtown Manteo is in short supply. Approximately 50 offstreet public parking spaces exist and an additional 40 are under construction (Summer 1986). Additionally, 250 spaces exist along the streets in downtown Manteo and 190 more spaces exist at the Elizabeth II Historic Site on Iceplant Island.

The need for future parking in downtown Manteo will depend on the direction of downtown development/redevelopment. If the area becomes a tourist oriented commercial area then parking requirements will be greater than if the area develops a more residential character.

The increased tourism spawned by the Elizabeth II should logically use the historic site parking for both activities at the site and in town. The Town can make this more likely by better signage and by providing transportation from that lot to downtown particularly on peak days.

Downtown employees, particularly those of the County, utilize much of the available parking, particularly on street during weekdays. While the number of downtown county employees should not increase significantly, an increase in other downtown employees will increase the burden on the already limited spaces.

The problem is exacerbated by the lack of available vacant land downtown and the cost of what does exist. Additionally, land which is now used (informally) for parking is scheduled to be developed in the near future, and this will further load the existing public parking.

The policies section of the report addresses the downtown parking problem with specific proposals.

3. Impacts on Schools:

As discussed in the Report on Existing Conditions, Manteo is served by three schools: Manteo Elementary, Manteo Middle, and Manteo High School. Of these Manteo Elementary is the only one operating below capacity. In general, growth within the Town of Manteo is not expected to seriously impact the school system, because despite a projected influx of new younger residents, the existing population appears to be getting older.

If however, Roanoke Island becomes the preferred location for the younger working people in Dare County, the pressures on the Island's schools will increase. Previous experiences with the N. C. Department of Public Instruction's pupil attendance projections indicate that their models do not work well in areas where in migration is a major factor in population growth. Material contained in the County's Carrying Capacity Report would seem to bear this out for Dare County.

The key factor will be the type of growth that the Island experiences. However, as mentioned previously, the planning and operation of the school system is not in any way the responsibility of the Town of Manteo.

IV. PLANNING OBJECTIVES AND POLICIES

The following are the issues, objectives, and policies proposed for adoption in the Manteo land use plan. The issues are derived from three sources: the rules governing the development of CAMA Land Use Plan Updates (1), the direction given by the Manteo Town officials at the time the planning began (2), and the consultant's analysis of present and future conditions (3). The source or justification for the inclusion of any particular issue is indicated by the notation of a (1), a (2) and/or a (3) respectively. There are some issues required by the CAMA rules which are not relevant to the Town of Manteo, and these are discussed in the final part of each section.

For each of the issues discussed, a planning objective is presented. The determination of the objective is the first step in the development of future plans and policies for the Town. Following the proposed objective, a set of policy or action recommendations is made.

The Coastal Resources Commission has defined its required policy areas into five broad topics and the following policy recommendations are organized in that way. These topics are as follows:

- ° Resource Protection
- ° Resource Production and Management
- ° Economic and Community Development
- ° Continuing Public Participation
- ° Storm Hazard Mitigation

A. RESOURCE PROTECTION ISSUES

1. Development In Areas with Physical Constraints (1)

Strictly speaking there are no real constraints to development within the non-AEC areas of the Town of Manteo. The area is effectively fully developed. There are, of course, special things which must be done to address some of the site related physical characteristics which are encountered. In general, they are as follows:

a. Flooding

U.S.F.I.A. flood elevations are established and will be adhered to. There are, however, several problems with the existing flood elevations which were discussed in the previous sections.

° Objective

To protect the structures, facilities, and residents of Manteo from unreasonable damage from flooding.

° Policies

- 1) All new development must meet flood insurance elevations.
- 2) A definitive topographic map of the Town will be prepared so that accurate flooding elevations can be delineated.
- 3) The Town will pursue a redefinition of the 100 year flood level with the appropriate Federal Agencies.

b. Protection of Potable Water Supply. (1) (3)

Manteo obtains its potable water supply from Dare County which pumps from an aquifer located approximately 150 feet below the land surface of Roanoke Island. The recharge areas for this aquifer are not well defined but it is assumed that some recharge finds its way from the

water table aquifer which lies close to the surface throughout the Manteo area. Manteo has an ordinance which prohibits septic tanks in the Town and a positive storm drainage system which discharges the Town's storm water to the Sound and the Bay. The Town's new sewage treatment plant will utilize land treatment through rotary distributors and shallow groundwater monitoring wells have been located throughout the disposal area.

° Objective

To protect the groundwater beneath Manteo from contamination by hazardous or toxic materials.

° Policies

1) Persons and businesses within Manteo who operate or maintain underground storage tanks for fuels or other materials shall ensure that such tanks do not leak. Such persons shall be requested to ensure that a copy of any required state permits governing underground tanks are filed with the Roanoke Island Fire Department. All tanks shall be installed in accordance with applicable codes and standards.

2) Persons or businesses who utilize materials which may cause harmful contamination of the ground or surface waters shall ensure that such materials are stored safely and that containers are checked regularly for leaks.

3) No private land or subsurface disposal of potentially contaminated solid or liquid waste material within the Town of Manteo.

4) No septic tanks allowed in Manteo under normal conditions.

5) Newly annexed areas shall connect to the sewer system as quickly as practical.

6) When stormwater is retained in infiltration basins, such basins should be grassed to provide filtration. Basins should be regularly cleaned and maintained.

c. Areas with Poor Soil

Some limiting soils exist in Manteo. Since septic tanks are illegal in Manteo and since most new buildings require significant fill before construction, drainage is the only significant soils related problem in the Town. The Town has completed a drainage plan and will be adopting a drainage ordinance.

° Objective

To minimize the impact of poor soils on development in the Town and to minimize the Town's long term problems because of development on poor soils.

° Policies

1) When the Town feels that Soils could be a problem for a new development, it will require the developer to present information which demonstrates that soils problems are being rectified. Developers building on soils defined by the S.C.S. as Psamments must include a soils impact study as part of their plan of development.

2) Where poorly drained soils exist, developers may be required to design and construct drainage improvements.

d. Septic Tanks

° Objective

To eliminate the health and environmental risks associated with septic tanks and to ensure maximum utilization of the Town's sewer system.

° Policies

- 1) No septic tanks in Manteo
- 2) No areas annexed until mechanism for sewage collection and disposal in place. Properties must connect as quickly as reasonably possible.

2. Development in Areas of Environmental Concern (1)

There are four categories of designated AECs in Manteo: estuarine waters, coastal wetlands, public trust waters, and estuarine shorelines. With respect to estuarine waters, coastal wetlands, and public trust waters, the following objective is adopted.

° Objective

To keep estuarine waters, coastal wetlands, and public trust waters within the jurisdiction of Manteo in their natural state and to improve their existing quality as possible.

With respect to Estuarine Shorelines, the following objective is adopted.

° Objective

To develop estuarine shorelines in a manner consistent with the achievement of Objective 1.

° Policies

- a. Land uses allowed in or appropriate for each AEC:

- 1) Estuarine waters/public trust waters:

- ° Recreation
- ° Commercial navigation
- ° Commercial fishing

2) Coastal wetlands:

- ° Docks across

3) Estuarine shorelines:

- ° Residential
- ° Commercial - water oriented - light commercial
- ° Recreational/institutional (parks, parking, etc.)

b. Policies guiding land uses in AEC:

1) State permits must be obtained

- Town to receive copy of all state permit applications,
and all final permits.

2) In public trust and estuarine waters:

- ° No littering
- ° No waste discharges
- ° No live-aboard residential (w/o permit)
- ° No interference with commercial fishing facilities or activities
- ° Compliance with state use standards

3) In coastal wetlands:

- ° No further dredge and fill without Town approval
- ° Piers on pilings only
- ° Minimum disturbance of marsh during any construction
- ° No littering or waste discharges
- ° Compliance with state use standards

4) On estuarine shorelines:

- ° No gas stations or other uses with hazardous or toxic

materials (except marinas)

- ° In B-2 zone, no more than 30% lot coverage with impermeable surfaces (see pg. II-21).

- ° Compliance with state use standards

3. Development Adjacent to Important Cultural and Historic Resource Areas (1) (3)

The Town of Manteo sits in the center of an important cultural and historic area. The Town has, in the past, considered the adoption of a historic district ordinance governing the downtown area. While this was not adopted, there is still interest on the part of many citizens in the protection of the several downtown area historic structures and of the relaxed turn of the century ambience of the downtown area generally. The following objective is adopted.

- ° Objective

To pursue the continuing development and redevelopment of Manteo in a manner respectful of the historic and cultural resources of the community.

- ° Policies

1) Where sites of historical or cultural importance exist, development of them or around them shall be carried out so as to protect or enhance those features of importance (see pg. II-46).

2) The area bordered by 64-264, Fernando Street, John Borden and Barlowe Streets and Dough's Creek is considered an area of special historic importance and within that area special attention will be given by the Planning Board and the Board of Commissioners to the design of new or improved structures and to the need for special permit conditions.

3) The ship "Elizabeth II" is of special importance to the Town and the Town's policy is therefore to avoid any actions which may threaten the integrity of the ship or the State Historic Site.

4. Management of Stormwater Runoff. (1) (3)

The Town's current stormwater system discharges both east to Shallowbag Bay and west to Croatan Sound. There is no data which defines the impact of these discharges on the water quality nor have there been studies which attempted to define these impacts. Because of the very flat slopes, the undersizing of some of the drainage channels and the tendency for debris to block some culverts and ditches, drainage in some areas of town is slow, and local flooding of lawns, streets, and driveways is not uncommon. The Town recognizes the need for some formal way to deal with drainage from new projects. The following objective is suggested:

° Objective

To develop a storm drainage strategy and ordinance which minimizes stormwater impacts of development on adjoining land owners and the public and which minimizes the impact of the stormwater on the quality of ground and surface waters. Additionally, to identify those areas of Manteo with current storm drainage problems and to correct those problems.

° Policies

1. Stormwater from developed sites shall not flow onto or across the lands of another without proper easements and drainage.

2. The Town will identify those areas of Manteo where storm drainage problems exist and will proceed on a priority basis as funds are available to correct those problems.

3. To the maximum extent feasible, stormwater shall be disposed of on site.

4. When new development (excepting single family housing constructed by or for the lot owner) proposes to use the public storm drains or ditches to dispose of stormwater, the developers shall conclusively demonstrate that:

a) Capacity exists in the storm drainage system to carry their stormwater from the 10 year, 24 hour storm

b) Their stormwater will not cause overflow or damage to other property.

c) Their stormwater will not cause contamination of the receiving waters

5) When developers design and place storm drains, or culverts in the Town, the Town will require those facilities to be sized so as to convey all current and projected flows from that drainage basin.

5. Marina & Floating Home Development. (1) (2) (3)

Manteo has one full service marina and is currently enlarging the Town docks. Because of the waterfront location, this type of development is an important way for the Town to enhance its livability and to encourage public use of the waterfront and the waters of the Bay and the creeks. All the new dock development is occurring in areas which have been the site of docks and waterfront activities for over 100 years. The following objective is adopted.

° Objective

To carry out future dock and marina development in an environmentally compatible way and to ensure that the operation and use of all

dock, boat basin, and marina facilities in Manteo is consistent with the protection of the water quality and the important natural resources of the area.

° Policies

- 1) New marina development in existing dredged areas only.
- 2) No overboard discharges of sanitary waste from marine toilets.
- 3) No permanent live-aboards without a town CU permit.
- 4) All town ordinances regarding docking must be complied with.

6. Sewage Effluent Discharges to Shallowbag Bay: (2) (3)

The Town currently discharges an average of about 100,000 gpd of good quality secondary treated domestic sewage effluent into Shallowbag Bay. Another facility (Roanoke Properties) has recently received a state permit to discharge 100,000 gpd of secondary effluent into the same area. For many reasons, Manteo wishes to remove its own discharge from the Bay and to prevent further discharges. The Town's new sewage treatment plant has significantly reduced the discharge from its existing plant and the Town has been negotiating with the owners of the newly permitted facility (not yet constructed) over the potential for Town treatment of the development's sewage. The following objective and policies are adopted:

° Objective

To remove all the sewage effluent discharges from Shallowbag Bay at the soonest reasonable opportunity.

° Policies

- 1) The Town will operate its two treatment plants to minimize the discharge to the Bay and to give what must be discharged the highest possible treatment.

2) The Town opposes the permitting of any new discharges to the Bay.

3) The Town will work to completely remove its discharge from the Bay.

7. Issues Mandated by State Planning Guidelines which do not apply to Manteo.

a. The Use of Package Sewage Treatment Plants: Manteo is completely served by its central sewerage system and therefore package treatment plants are not necessary.

b. Industrial Impacts on Fragile Areas: Manteo has no industrial development nor does it have vacant lands which are zoned for industrial uses.

c. Development of Sound and Estuarine System Islands:
Manteo's Town limits encompass no sound or estuarine system islands.

B. Resource Production and Management Issues (1)

1. Fishery Nursery Areas: (1)

Shallowbag Bay and Dough's Creek are designated by Marine Fisheries as nursery areas for many different species of commercially important fish. The Town recognizes the importance of maintaining good quality water and avoiding unnecessary disruptions of these areas. The policies proposed for issues 2, 5, 6, and 7 directly address the actions the Town can take to protect this important local resource. Therefore, no specific objectives or policies are proposed to address this issue.

2. Issues Mandated by State Planning Guidelines which do not Apply to Manteo

- a. Productive Agricultural Lands: There are no agricultural lands within Manteo.
- b. Commercial Forest Lands: There are no commercial forest lands within Manteo.
- c. Mineral Production Areas: There are no existing or potential mineral production areas within Manteo.
- d. Off Road Vehicles: There are no areas within Manteo where off road vehicle use is a problem.
- e. Commercial and Residential Land Development: Except for the areas designated as "Conservation", land development is encouraged within the Town of Manteo. The zoning ordinance describes those areas where various types and intensity of development should occur.

C. ECONOMIC AND COMMUNITY DEVELOPMENT ISSUES

1. Local Commitment to Providing Services to Development (1) (2) (3)

As discussed in previous sections, Manteo is unique among Dare County communities in that it has a city-wide municipally owned water and sewer system. The capacity of the sewer system has recently been increased and the water and sewer systems are now of adequate size to handle the flow demands of the area within the existing Town limits for the foreseeable future. The Town by ordinance requires that residences and businesses within the Town connect to both the water and sewer system. Within the current Town limits therefore the only issue regarding utility service is the cost of any necessary collection/

distribution system expansions. There are only a few lots where service is not immediately available and the first objective/policy set addresses these situations.

More complex issues are raised by the extension of these services beyond the existing Town limits. Cost of line extensions, expansion of the various facilities, relationship to annexation, coordination with Dare County, all these are factors which need consideration. The second objective and policy set addresses these.

° Objective

To provide necessary urban services to new development within the existing Town limits at no net cost to existing residents or the Town.

° Policies

- 1) All residents, businesses, and occupied structures within Town limits of Manteo must be connected to Town water and sewer system.
- 2) In accordance with Manteo's current ordinances, any extension of water and sewer lines required by any new development over and above established requirements to be paid for by that development.
- 3) Any increase in utility capacity required by new development to be financed by that developer.
- 4) No development permits issued until above issues resolved.

° Objective

To provide no urban services to areas or developments outside the Town limits except when the provision of such services is made at no cost to the Town and only upon the condition that the areas to be served petition for annexation to the Town of Manteo.

° Policies

1) Any area outside Town limits wishing town services must first petition for annexation.

2) In the case where extension of Town services requires a capital expense by the Town, either for the expansion of existing facilities or for the construction of new facilities, the annexation petition must be accompanied by description of proposed method of financing the capital expense.

3) In the situation where the area to be annexed includes subdivisions or other developments already approved by Dare County, a certification must be provided by the county that water adequate to serve those approved developments will be allotted to the Town of Manteo above and beyond the allotment already held by the Town.

4) The annexation petition must contain a comprehensive evaluation of the costs and the benefits to the Town of providing all services. Services of concern include water, sewer, storm drainage, solid waste collection and disposal, police and fire, and code enforcement.

Other Optional Objectives Considered:

1) To provide no urban services to areas or developments outside the existing Town limits.

2) To provide services at Town expense.

2. Types of Urban Growth Patterns Desired and Redevelopment of Developed Areas: (1) (3)

As discussed in previous sections, Manteo is an essentially fully developed community. It is completely zoned and the zoning map

and ordinance speak directly to the current policy of the Town with respect to urban growth. A very large part of the Town (70%) is zoned for commercial uses, and as indicated on Table 3, within the two commercial zones, a large mixture of uses are allowed. In general, this plan does not propose to change the current policy. Instead, the objectives and policies described below, rearticulate the current policies, provide refinements of those existing policies or address development issues which were not covered by the existing plan or ordinances. There are five sub-areas of Manteo which are dealt with in this section. They are as follows: downtown, Hwy 264/64 corridor, residential areas east of 64/264, residential areas west of 64/264 and the High School and Iceplant Island areas. Each of these areas is addressed separately.

a. Downtown Manteo: Downtown Manteo is currently zoned for "Village Business". This zoning encompasses a variety of retail uses, services, offices, and special uses (outdoor markets, cottage industry) which would appear to lend themselves to a dense waterfront, tourist oriented downtown area. Also included are the full range of residential uses allowed in the Town. The vision contained in the 1981 Land Use Plan of the downtown area as a festive retail and tourist spot combined with the day to day functions of the small seaport and county seat has been slow to materialize. There is not yet a real willingness by local landowners and developers to gamble on the future of downtown Manteo and most of the investment so far has come from out of town interests. The policies below support the objective of a continued emphasis on downtown development and seek to reaffirm the design orientation of the previous plan.

° Objective

To continue to develop/redevelop downtown Manteo as the focal point of the community with an emphasis on a mixture of small commercial recreational governmental and residential uses.

° Policies

- 1) New development in downtown area will be encouraged.
- 2) Such development will be encouraged to conform to design guidance contained in 1981 Plan.
- 3) The Town will address the parking problem through the implementation of the policies set forth in Issue C-7.
- 4) Combined residential/commercial uses of structures will be encouraged.
- 5) The Town will support the creation of a Roanoke Island Merchants Association.
- 6) The Town will proceed with the development of a recreational area on Iceplant Island, thereby making downtown more of a community focal point.
- 7) The Town will encourage the relocation of inappropriate uses and will consider the redefinition of permitted uses in the Downtown area.

Other Optional Objectives Considered:

- 1) Discouragement of further tourist development
- b. Highway 64/264 Corridor: This corridor extends from one end of Manteo to the other and generally is about 1 lot deep (100 - 300 feet). This is the area where the most intense current development in

Manteo is occurring. The area is completely zoned B2 - General Business. Given its current zoning and the continuing demand for highway frontage, this area is expected to keep on developing. There are a number of residential lots along this highway and under current policies, these are expected to be converted to commercial in the future. There has been no indication that this causes a problem to the landowners. The main problems encountered along this strip involve neighboring use conflicts, design disagreements, traffic access, and increasing congestion of the highway. In short, problems which are always associated with strip commercial areas. The following objective and policies are adopted:

° Objective

To continue the commercial development of the area adjacent to Highway 64/264, but to do so in a way that minimizes development impacts on the highway, neighboring uses and the rest of the Town.

° Policies

1) The Town will petition the N. C. Department of Transportation to prepare for the Town's consideration, a long term plan for the efficient utilization of the 64/264 Highway corridor across Manteo. The plan should address issues such as: ultimate right of way width, road configuration, location of lights and use of access roads.

2) Based on this plan the Town will amend its ordinances as necessary to provide for necessary setbacks and access controls.

3) New commercial development occurring along this highway will provide sidewalks set back from the street and will install and

maintain suitable landscaping. The Town encourages as much vegetation as possible (consistent with safety concerns) along this highway.

4) New structures should be designed to harmonize with the character of the Town and the nearby uses.

5) The town encourages the use of vegetative and structural buffers between incompatible uses (i.e. gas stations and motels) and may require them in some cases.

Other Optional Objectives Considered:

1) Downzoning of existing residential areas along highway to residential zone.

c. Residential Areas East of Highway 64/264: This is the residential area of "Old Manteo". Many old and beautiful structures exist here and the area is nearly completely developed. No special problems exist here although future redevelopment may pose problems for some of the existing uses and structures. The following objective and policies are adopted.

° Objective

To maintain the residential character of the neighborhood and to avoid the erection of any incompatible structures.

° Policies

1) To propose again for public hearing the historic district ordinance considered previously for part of this area.

2) To encourage builders of new structures to make their designs compatible with neighboring structures.

d. Residential Areas West of Highway 64/264: This part of Manteo was annexed to the Town in the late 1970s. It is generally subdivided into small lots and has a mixture of housing from substantial homes to mobile homes to delapidated shantys. Most of the Town's undeveloped residential land is in this area. The following objective and policies are adopted.

° Objective

To encourage the development/redevelopment of vacant land west of Highway 64/264 and to support projects designed to improve the housing and living conditions of existing residents.

° Policies

1) The Town will consider the rezoning of those areas currently zoned R2 - Medium Density Residential to R5 - General Residential.

2) The Town encourages the consolidation of existing very small lots into larger parcels and the redevelopment of those parcels for permitted uses.

3) The Town will seek a Community Development Block Grant to improve streets, drainage, and some housing in the western residential areas.

4) The Town will support all neighborhood efforts to clean up and improve the appearance of the area.

5) The Town supports the development of currently vacant large parcels into multi-family residential units.

e. High School and Iceplant Island

These areas were annexed to the Town since the zoning ordinance was last amended and have not, therefore, been zoned. None of the five existing zoning categories seems appropriate for these areas. The High School is essentially committed space and Iceplant Island is designated purely for recreation. The following objective and policies are adopted.

° Objective

To manage the current use and future development of the High School and Iceplant Island areas in a manner consistent with their dedicated purposes.

° Policies

1) The Town will consider the development and adoption of a new zoning classification: "Institutional". This classification is intended to cover certain public interest and service related land uses including: schools, parks, conservation areas, government buildings and facilities, and other similar uses. If this use is adopted, then the High School property and Iceplant Island will be classed as "Institutional" districts. Other similar sites in Town may also be classed this way.

2) The Town intends to develop, using public funds and donations, a portion of Iceplant Island as a public park. This development will be done consistently with the State Historic Site currently on the Island. The Town will consider seeking a grant of Beach Access Funds from the N. C. D. N. R. C. D. to assist in this project.

3. Support for State and Federal Programs and Assistance to Channel Maintenance Projects: (1)

Because of its location on the water and because of its historic interest, Manteo is heavily impacted by State and Federal programs. Its experiences have been mixed and in the future the Town is interested in maximizing the benefits and minimizing the risks of participation in such programs. The following objective and policies are adopted.

° Objective

To support State and Federal programs in Manteo which result in a net benefit to the Town and its citizens.

° Policies

1) The Town Administrator will evaluate any potential State and Federal programs and discuss them with the Board.

2) State/federal officials will be invited to make a presentation to the Town.

3) The Board of Commissioners will debate the pros and cons of participation and make a decision.

4) To provide reasonable assistance to channel maintenance and beach nourishment projects which benefit the Town of Manteo and its citizens.

4. Tourism and Beach and Waterfront Access: (1) (2) (3)

Manteo is a seaport and the waterfront has always been the focus of activity in the community. As part of the preparation for the 400th Anniversary of the first Roanoke Colonies, a major revitalization

effort was undertaken in the waterfront area. The area now has new commercial and residential spaces; new docks and a waterfront park have been or are being constructed; the Town is well on its way to removing the Sewage Treatment Plant; and, the Elizabeth II, a major attraction, is now berthed directly across Dough's Creek from Downtown. The Town wishes to continue waterfront development and encourage the continued revitalization of the downtown area.

As part of the development of the Elizabeth II site, a bridge was constructed to a dredge spoil area across the Creek and this is where the Elizabeth II visitor center is located. The Town, as part of the overall development agreement, obtained the use of several acres of land near the Center and has plans to develop a community park and picnic ground. The Town would eventually like to develop a beach in the same area. The following objectives and policies are adopted.

° Objective

To encourage maximum public utilization of the downtown Manteo waterfront area and the maximum visitation to the Elizabeth II.

° Policies

1) The Town will continue to support the wise development of the downtown Manteo area - (see discussion and policies for issue C2a).

2) The Town will continue to encourage businesses and other land owners to landscape and "dress up" their property, and the Town will ensure that public areas are carefully maintained.

3) The Town will address the downtown parking situation as per the policies contained in issue 7.

4) The Town will encourage the formation of a Roanoke Island Merchants Association and will work with that group to actively promote

Manteo as a tourist and shopping area. Such promotions might include more festivals, package tours of Roanoke Island attractions originating from Manteo, cruises originating from Manteo, coordinated sales, more aggressive advertising, etc.

5) The Town will investigate the idea of providing some more innovative ways of reaching downtown from the Elizabeth II. Ideas include horse and carriage, train, and launch.

6) The Town will remove the sewage treatment plant from the downtown area as quickly as possible and will explore the possibility of an adaptive use of the structures.

7) The Town will evaluate the current access and egress routes from 64/264 to downtown and the Elizabeth II and may change or add to the existing routes.

° Objective

To develop a public recreation area on Iceplant Island near to the Elizabeth II State Historic Site.

Policies:

1) The Town has appointed a special committee to steer this project.

2) The project will proceed in stages with a picnic area/playground being developed first.

3) The design of the project will be in harmony with the State Historic Site.

4) The Town Planning Board will review the committee's proposals and will comment on them to the Board of Commissioners.

5) The Town would like to eventually develop a beach on this site. A shoreline boardwalk is also under consideration.

° Objective

To develop other waterfront access sites as the Town expands.

Policies:

1) The Town will evaluate other potential waterfront access sites with particular attention to Scarboro Creek and Croatan Sound.

5. Annexation: (3)

Manteo is relatively small in size compared to the urbanizing area which surrounds it. It is the nucleus point for northern Roanoke Island and contains the area's only municipal sewage system. As discussed in the projections section (Section III) a very large proportion of the land surrounding Manteo is subdivided and most of this is split into relatively small lots. Development of that land, at anywhere near the subdivided densities, will require central sewage collection and treatment and such development will also require the other urban services which the Town provides.

Manteo has recently been approached by the developers of Pirates Cove, a large, planned, residential-commercial development on the causeway to Nags Head. These developers desire to connect to the Town's sewage system and in exchange have offered to construct major system improvements and to petition for annexation. The Town is currently (June 86) debating the costs and benefits of such a step and it is obvious that there are other lands and developers which would consider making similar approaches to the Town.

Three options have been considered here and discussed by the Town. They are:

1. Annexation on a case by case basis based on petitions from property owners and only when the Town can reasonably assure itself that costs to existing residents and taxpayers will be negligible;

2. Declare the existence of some "Manteo urban zone" and aggressively pursue annexation of that entire area; or,

3. Refrain from any further annexation.

The Town has selected the first option and therefore, the following objective and policies are adopted.

° Objective

To expand the Town limits of the Town of Manteo by annexation of adjacent or nearby lands based on a principal of voluntary association and minimal costs to current residents and taxpayers.

° Policies

1) Annexation will be prerequisite to receiving services from the Town of Manteo.

2) The Town will accept annexation petitions from property owners wishing to associate with the Town.

3) Annexation petitions must be accompanied by a study, including any necessary engineering analyses prepared at the petitioner's expense, which fully describes the current and long-term costs and benefits to the Town, associated with the annexation action.

4) Areas petitioning for annexation which contain lands for which a subdivision plat or a development plan has been approved by Dare County must present a certification by the county that adequate water is available to serve such land and that such water will be added to the Town's existing allotment.

5) The Town will not annex areas where the long term costs to the Town's existing residents are shown to significantly outweigh the benefits.

6. Water and Sewer Line Replacement: (2) (3)

As discussed in Section II, water and sewer lines in downtown Manteo are very old. Leaks are not uncommon in water lines, and sewer lines are subject to significant infiltration. The Town desires to undertake, as funds become available, a planned replacement of these lines. The following objective and policies are adopted.

° Objective

To schedule and implement a planned redesign and replacement of water and sewer lines in the older areas of Manteo.

° Policies

1) The Town will set priorities and as necessary plan for different sized pipes based on a general engineering study to be carried out as soon as possible.

2) The general principals guiding the project will be as follows:

- a. Work begins in Fall;
- b. one street at a time;
- c. all utilities redone when streets torn up; and
- d. all utility wires underground if possible.

3) The Town will establish a special fund to be served from water and sewer revenues. While the Town will seek grants to finance the work, the special fund will be used as a fall back finance method.

7. Downtown Parking: (2) (3)

As discussed in both sections II and III, downtown parking is a problem for Manteo now and may well grow worse. Town policy is to some

extent to blame for this, since the zoning ordinance for the village business district has reduced the amount of parking which new developments must provide. This was and is still considered a desirable trade-off to encourage a more densely urban setting.

The Town's options are limited in this situation since most of the land downtown is developed either for structures or for private parking. The objective and policies discussed below attempt to work in the realm of the possible by making maximum use of the spaces currently available and by recommending some selected acquisitions and the joint use of some private sites.

The N. C. Department of Transportation plan for the Town discussed in Section II contains many good suggestions regarding both parking and circulation and this should be studied carefully by Town officials. The following objective and policies are adopted:

° Objective

To increase public parking in the Downtown Manteo area, particularly during peak use periods.

° Policies

- 1) Maximize the utility of the available on-street parking.

To do this, the Town will:

- a) Mark all spaces
- b) Limit on-street parking downtown to two hours and enforce.
- c) Use signs to encourage on-street parking outside of downtown (i.e., along Fernando, Budleigh, Uppowoc, and Annanias Dare) and allow for a longer parking period on those streets.

2) Maximize the utility of available off-street parking, both public and private. To do this the Town will:

a) Mark all spaces in public lots and encourage the marking of spaces in private lots.

Note: The DOT study (pg. 110) recommends that parking spaces be standardized at 7 1/2 by 22 feet. Existing spaces in town (public or private) should be marked or remarked at that size.

b) Limit parking time in public lots to two hours and enforce.

Note: While private lots should not have a time limit imposed during working hours, in situations where lots are used for public parking on weekends, time limits could be imposed.

c) Enter into agreements with private lot owners to provide for public parking in private lots during certain hours or on certain days. The Town will provide signs, trash cans, and clean-up, and will consider some other credits for areas used for public parking.

d) Provide signs directing people to off-street parking away from downtown.

3) Increase the availability of off-street public parking. To do this the Town will:

a) Identify vacant parcels or areas used for informal parking and work with the landowner to make these available for public parking. While outright purchase will be the most secure way of obtaining use of the land, medium and long-term leases may also be acceptable.

b) Consider utilizing the Town's powers of eminent domain if no other methods of acquisition are available.

c) Consider acquiring small vacant parcels which may not be useful for any other purpose. Several small lots may be more benign than one large lot and land costs should be less.

d) Require developers of new downtown structures to provide a certain number of public spaces in addition to the required private spaces.

4) Increase utilization of the parking spaces available at the Elizabeth II site. To do this, the Town will:

a) Ensure that signs are evident downtown directing people to parking at the Elizabeth II site.

b) Provide signs at the Elizabeth II site encouraging people to walk across the bridge and visit Manteo.

c) Investigate the idea of providing, particularly at peak times, some more innovative ways of reaching downtown from the Elizabeth II site. Ideas include horse and carriage, tram and launch.

8. Improvements to Highway 64/264: (2) (3)

Highway 64/264 is the main thoroughfare across Roanoke Island and through Manteo. Average daily traffic near Sir Walter Raleigh Street on 64/264 was reported by the N. C. Department of Transportation as being about 12,000 vehicles per day in 1984 and peak traffic flows are much greater. Growth of the county's population will cause significant increases in traffic and this will have to be handled in this corridor and most probably on the existing right of way (ROW). The

design and construction of an ultimate roadway through Manteo should be accomplished as soon as possible so that new development can be designed to enhance the flow of traffic. The following objectives and policies are adopted.

Objective:

To encourage the NCDOT to schedule the upgrade of Hwy 64/264 through Manteo as a high priority in the next Transportation Improvement Program.

Policies:

1) The Town will confer with DOT thoroughfare planners as quickly as possible. Based on these discussions, the Town will determine what it really wants, and in particular:

- ° How wide a ROW?
- ° How many lights? Where?
- ° Should access roads be planned for?
- ° What type of landscaping should be planned for?
- ° How can underground utilities most efficiently be developed?

2) The Town will request, as discussed in issue C.2.b., the DOT to prepare a thoroughfare plan which reflects the Town's objectives, and to develop a project description for inclusion on the highway construction priority list.

3) The Town will work with County legislative delegation and DOT Board members to get a high priority placed on Hwy 264 improvements.

4) The Town will adopt a special overlay ordinance dealing with new development along highway. This ordinance will deal with:

- ° Setbacks from highway
- ° Building appearance
- ° Access to highway
- ° Landscaping of highway and structures.

° Objective

To carefully review proposals for new development along Hwy 64/264 so as to minimize congestion from traffic seeking to enter or leave the highway.

° Policies

1) The Town will encourage groupings of businesses rather than small single lot activities. Such grouping will allow for fewer driveway accesses to the Highway.

2) The Town will require businesses to provide accesses to side streets where these are adjacent.

3) Driveway accesses to Highway 64/264 should be at least 500 ft. apart.

4) Setbacks to allow for access roads may be required.

9. Underground Utilities: (2)

Overhead utility wires proliferate across Manteo and Roanoke Island and it has been an objective of many residents and the Town to reduce the clutter of these wires by placing them underground. While technology is readily available to accomplish this, it is expensive to implement and particularly in situations where frequent connections must be made and existing highways, driveways, and yards torn apart.

There are two issues here. First, the 64/264 corridor serves as the main utility corridor bringing electric power from its source,

down the beaches, to Roanoke Island and beyond to Mann's Harbor. This line has recently been upgraded and N. C. Power has indicated that future upgrades may be placed underground, at least from the Baum Bridge to Fernando Street. The placing of the entire main feed line underground or the rerouting of it away from the highway corridor is one major objective.

Secondly, the 64/264 corridor and the Town street are strewn with wires which serve local customers. These lines carry not only electrical power but also telephone and TV cable. These lines, particularly electrical, are very expensive to place underground largely because of the expensive switching equipment needed to serve individual homes, and the need for extensive digging in streets and yards.

The Town does have an ordinance addressing new lines which requires that they be placed underground except where following existing pathways.

The main problem with accomplishing either of the objectives discussed below is cost and particularly the allocation of that cost. The utility is unwilling for its shareholders to bear the burden of the cost and believes that since, in most cases, undergrounding does not represent the cheapest solution, its additional costs are not eligible for inclusion in the rate base. Based on the admittedly slim results of the Town's survey, the residents and taxpayers of Manteo are not willing to foot the bill. The Corridor Commission argues that since Manteo and Roanoke Island are important historic and cultural areas, there is a statewide interest in achieving these objectives and that, therefore, the costs should be widely born and that the utility, as it apparently has done in Williamsburg, should also participate.

The Town of Manteo is a relatively small player in this game, and its objectives should be to keep the pressure on to ultimately get the lines underground while at the same time protecting the financial interests of its residents and taxpayers. The following objectives and policies are adopted.

° Objective

To achieve the ultimate removal of main overhead utility lines from the Hwy 64/264 corridor through Manteo and Roanoke Island at a minimal cost to the public.

° Policies

1) The Town supports the investigation of the development of another utility corridor from beach to mainland.

2) The Town believes that lines which do not serve current customers should be placed underground through the corridor as quickly as economically feasible.

3) The Town recommends the Corridor Commission establish a task force on utility lines composed of NC Power, Town, County, Telephone, TV and cable representatives.

4) The Town encourages North Carolina Power to utilize every opportunity to get more of system underground.

5) The Town urges the Corridor Commission to seek State financial support.

° Objective

To achieve the ultimate removal of overhead utility lines from the Town of Manteo through a policy of gradual removal and through coordination with the renewal of Town water and sewer lines.

° Policies

1) The Town will confer with utilities (NC Power, etc.) on procedures for joint action.

2) The Town will consider utility lines in water and sewer line replacement priority setting and planning.

3) When setting construction schedules for utility replacement, every attempt will be made to integrate underground placement of wires.

10. Issues Mandated by the State Which are not Relevant to Manteo:

a. Types and locations of industries desired: Manteo has no industrially zoned land and is not planning for industrial location within its existing Town limits.

b. Energy facility siting and development: Manteo has no energy producing facilities and no plans to develop such facilities.

D. CONTINUING PUBLIC PARTICIPATION 1) (2)

The Town of Manteo believes strongly in the need and desirability of public involvement in the planning and decision making procedures of the Town. In the development of this plan, the Town developed a questionnaire and used the results to guide objective and policy development. The planning was discussed during public Planning Board and Town Board meetings during the winter and spring of 1986. A public hearing on this plan was conducted on March 4, 1987. Planning Board and Town Board meetings are advertised and the local newspapers provide regular and extensive coverage of meetings and issues. Still, more can be done, and the Town is committed to educating and involving its

citizens more fully in decisions. The following objectives and policies are therefore adopted:

° Objective

Provide for continuing, effective public education on planning and growth related issues in Manteo.

° Policies

1. The Town will sponsor a semi-annual forum with Town Board and Planning Board to discuss and debate the major issues expected to confront the Town in the future.

2. The Town will encourage the local paper to feature Planning Board agendas.

3. The Town will set agendas ahead of time to encourage discussion.

4. The Town will schedule one Planning Board meeting a quarter to deal only with planning issues.

° Objective

To encourage continuing public involvement in planning.

° Policies

1. The Town Board will request more public input to air citizen perspectives on important issues.

2. The Town will encourage more press coverage of important issues.

3. The Town will appoint more special task forces to address issues of concern and make policy recommendations to the Town Board.

E. STORM HAZARD MITIGATION, POST DISASTER RECOVERY AND EVACUATION PLANS.

"The North Carolina coast faces a strong threat of damages from hurricanes, northeasters, and other major storms. While there has been a marked lull in the number of hurricanes that have stricken the North Carolina coast in the past 20 years, the threat still exists; many say that North Carolina is long overdue for a major storm. At the same time, development along the coast has grown by leaps and bounds. Unless this development is wisely located and built to withstand hurricane forces, North Carolina's coastal communities will face massive destruction. Local governments, as the primary protectors of the public health, safety, and general welfare, have a responsibility to reduce the risk of property damages and loss of life attending coastal development. They also have a responsibility to ensure that reconstruction following a major storm can occur quickly and leave the community safer from disaster in the future. These are the goals of hazard mitigations and reconstruction planning.

Hazard mitigation includes any activity which reduces the probability that a disaster will occur or minimizes the damage caused by a disaster. Hazard mitigation includes not only managing development, but also evacuation planning and other measures to reduce losses of life and property. Reconstruction involves the full range of repair activities in the wake of a disaster which seek to return the community to a "normal" level of operations."¹

¹McElyea, et al, BEFORE THE STORM: Managing Development to Reduce Hurricane Damages, Center for Urban and Regional Studies. UNC-CH - August 84 - pg. iii

The purpose of this section of the Manteo Land Use Plan Update is to indicate the policies of the Town with respect to a major storm.

1. Risks from Storm Damage

The areas of Manteo threatened by the impacts of a major storm were discussed in some detail in Section IID. In general, the threat is as follows:

Flooding: The large majority of the Town of Manteo is classified by the Federal Flood Insurance Administration (FIA) as being in an "A" zone. This area is subject to flooding by the "100 year" storm event (i.e., the statistical probability of flooding is 1% in any given year). Figure 6 shows the areas subject to flooding in a 100 year or 500 year storm event.

Winds: Manteo is a small place and so it is assumed that wind speed in a major storm will be the same across all parts of the community. Most of the community is heavily wooded and therefore while falling trees and power lines could be a problem in a very large storm, most structures are at least partially screened.

There are no "ocean hazard areas" "inlet hazard areas" or "V zones" in the Town. There are some remnant wetlands and some estuarine shoreline AECs and while these are more vulnerable areas, Manteo's location within the protecting arms of Shallowbag Bay has in the past and will in the future, serve to protect the community from the fury of the waters in the great sounds. Therefore, erosion/scour and wave action/battering are not considered significant problems for Manteo.

It is important to remember that Manteo has stood on the same site for over 100 years and that many of the buildings in the Town have

been in place for nearly that long or longer. The Dare County Courthouse, sitting as it has on the waterfront since 1910, is a significant testament to Manteo's protected nature.

The main storm problem in Manteo has always been flooding and according to knowledgeable residents and based on experiences with Hurricane Gloria (Sept. 1985) flood waters tend to rise slowly, and inundate the Town and then recede in the same way.

In terms of the "magnitude of the risk, most of the Town's residents and businesses are subject to the flooding hazard and everyone is endangered by the high winds.

The 1980 census reported that there were 495 housing units within the Manteo town limits. There have been nearly 100 new units added since that time and there are additionally an estimated 100 structures used for commercial or institutional purposes in the Town.

About 45% of the housing predates 1960 but a majority of the commercial structures - especially in the rapidly developing 64/264 corridor - have been built since 1975 and have therefore been constructed more or less in accordance with newer building codes. The estimated damages in town from Hurricane Gloria¹ totaled \$415,000. This damage figure includes the loss by fire of the Ace Hardware Store as well as any flood related damage. While this may not indicate the potential impact of a very severe hurricane, it does demonstrate the relatively protected environment in which the community exists.

¹Source: N. C. Division of Emergency Mgmt. It should be recalled that there was a major structure fire in Manteo during Gloria and that this damage figure reflects that.

2. Hazard Mitigation

In light of the nature and magnitude of the risk described in the previous section, the Town of Manteo will be treated as one unit for the purposes of mitigation of storm hazards. Flooding and high winds are seen as the major problems and since virtually all of the Town is subject to the same type and degree of risk, no purpose is achieved by separating areas.

° Objective

To provide reasonable protection to the residents and buildings in the Town of Manteo from major storms.

° Policies

1) The Town of Manteo will develop and adopt its own Emergency Response Procedure designed to dovetail into and reinforce the Dare County Emergency Response Plan. The responsibilities of Town Officials before, during, and after the storm will be spelled out in that document. A draft procedure is included as Appendix D.

2) The Town supports the establishment of reasonable flood insurance elevations and will enforce flood insurance elevations which are in effect.

3) The Town will require the tiedown of mobile homes within the Town of Manteo and will support other aspects of the N. C. State Building Code applicable to the minimization of flood and wind damage.

4) In the event of the declaration of a "Readiness Condition #3" (hurricane watch) all boats berthed at the Town docks or moored in proximity thereto will be moved to a safe location (i.e., up Dough's Creek) or at a minimum to a location not immediately adjacent to downtown Manteo.

5) In the event of the declaration of "Readiness Condition 1" (12 hours or less till landfall), the Town will make preparation for the securing of its utility system. The general policies to be followed during the storm include:

a) Sewage treatment system will be shut down when local flooding begins.

b) Electrical power in the Town should be shut down. North Carolina Power will be requested to do this.

c) Water system will remain on unless it appears that tank level is dropping too low. In that event, water will be turned off so as to conserve potable supply and to provide pressure for fire suppression. Dare County will be requested to maintain water service as long as possible.

6) An information brochure describing the Town's policies and advising residents of actions to take will be prepared and distributed.

3. Post Storm Recovery:

The term "disaster" is not a particularly accurate one to describe the predicted impacts of a major storm on Manteo. Past experience has shown that storm damage is usually limited to water damage to structures, vehicles and landscaping, sediment deposition in certain areas and wind destruction of trees, power lines, and roofs. Major damage to buildings which renders them permanently uninhabitable is rare and normally therefore cleanup and reconstructure proceeds quickly.

Because of the Town's location and its layout, it is not contemplated that any structures currently existing should be prohibited from being rebuilt in the event of storm damage. Obviously, any struc-

tures which are rebuilt would be required to conform to applicable sections of the building code, and this in itself should be sufficient to minimize future damages. To the extent that a damaged structure was non-conforming with the zoning ordinance and the Building Codes, its reconstruction would be governed by those ordinances.

In the event of a major storm however, there will at a minimum be a big mess and the Town feels the need to establish an organization and some basic procedures to address that eventuality.

The following objective and policies are therefore established.

° Objective

To effectively respond immediately after a major storm to restore Town services as quickly as possible and to address any problems or issues which arise at that time.

° Policies

1) The Town hereby establishes the Manteo Storm Recovery Team comprised as follows:

- a) Town Administrator - Team Leader
- b) Designated member of the Town Board
- c) Designated member of the Planning Board.
- d) Town Building Inspector.

Ex officio members include Town Utilities Director, Town Street Superintendent, Chief of Police, and Town Clerk.

2) This team is charged with the following:

a) Assessing the damages caused by the storm and making a preliminary and final report to the Town Board

b) Providing for the restoration of Town services as quickly as possible.

c) Supervising the general cleanup of the Town and responding to citizen concerns.

d) Recommending any needed emergency measures or redevelopment standards to the Board.

e) Evaluating the Town's response to the storm and recommending any needed changes in the "Procedures".

f) Cooperating with state, local, and private entities involved in damage assessment and cleanup.

g) Other functions as assigned by the Town Board.

3) The Town will delay the issuance of building permits for reconstruction or repair of major damage until the Storm Recovery Team issues its report. Major repairs are those which cost more than 30% of the value of the structure. The Recovery Team may recommend special building provisions for structures with extensive damage.

4. Hurricane Evacuation Plan

Manteo is governed by the Dare County Hurricane Evacuation Plan and this plan is discussed in some detail in Section IIC. In general, the plan appears adequate to handle the situation in Manteo. Under the provisions of the Dare County Plan, the Town works closely with the county to provide for evacuation and sheltering of residents and visitors.

The main impact on the evacuation of Dare County will be the residents and visitors (particularly the visitors) on the beaches. The population of Manteo is so small when compared to the potential number of evacuees from the beaches, that the Town's actions or now in the future will have virtually no effect on the success of any evacuation. It is recommended that in the development of the Dare County Land Use Plan update, the issue of evacuation be carefully reviewed.

5. Re-entry

Re-entry to Manteo after a storm will be as provided by the Dare County Plan.

V. LAND CLASSIFICATION SYSTEM

A. INTRODUCTION

The land classification system provides a uniform way of looking at how the planned use of land interacts with environmentally sensitive areas and with the development of a county or town. It is not a strict regulatory device in the sense of a zoning ordinance or zoning map. It represents more of a tool to describe relationships between various land use categories and the way these relationships help shape local policy. Particular attention is focused on how intensely land is utilized and the level of services required to support that intensity. Land classification is also useful in the staging of services necessary to support development.

There are five general land use classifications, Developed, Transition, Community, Rural, and Conservation. In applying the land classification system, each local government should give careful consideration to how, where, and when certain types of, and intensity of development, will be either encouraged or discouraged. A brief summary of the five broad classifications, as contained in the CAMA rules, might illustrate this. For example: "urban land uses and higher intensity uses which presently require the traditional urban services should be directed to lands classified developed. Areas developing or anticipated to develop at urban densities which will eventually require urban services should be directed to lands classified transition. Low density development in settlements which will not require sewer services should be directed to areas classified as community. Agriculture, forestry,

mineral extraction and other similar low intensity uses and very low density, dispersed residential uses should be directed to lands classified rural. Generally, public or private water or sewer systems will not be provided in areas classified rural as an incentive for intense development." The conservation class provides for the effective long-term management and protection of significant, limited, or irreplaceable areas. Consequently, urban services (whether public or private) should not be provided to those areas as an incentive to more intense development.

Each of these classes must be represented on a Land Classification Map.

B. APPLICATION OF LAND CLASSIFICATION SYSTEM TO TOWN OF MANTEO.

A land classification map for the Town of Manteo is shown in Figure 11. From this map it is apparent than only two of the five land classes, developed and conservation, apply within the Town.

As discussed previously and as shown on the Existing Land Use map (Figure 3) the entirety of Manteo is developed. All parts of the Town are served by the water and sewer system. The following describes the two applicable classes in more detail and describes their relationship to Manteo. The policies discussed on page IV-5 regarding development in AECs should be reviewed in connection with this section.

FIGURE 11

TOWN OF

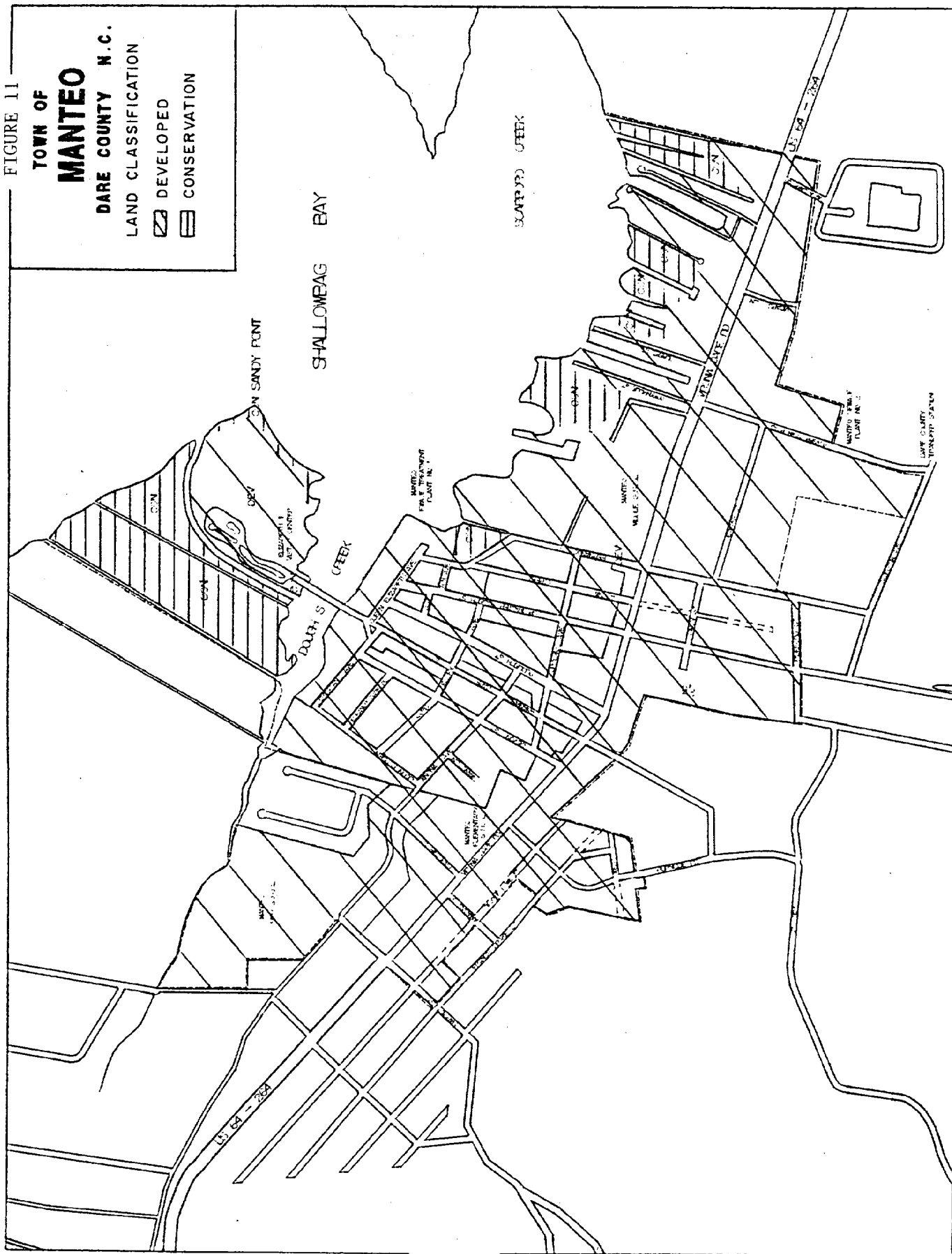
MANTEO

DARE COUNTY N.C.

LAND CLASSIFICATION

DEVELOPED

CONSERVATION



1. Developed Class

The developed class of land use provides for continued intensive development and redevelopment of existing cities or municipalities. Areas to be classified as developed include lands currently developed for urban purposes that are provided with usual municipal or public services, police and fire protection. In other words, such areas must currently be "urban" in character, i.e. have mixed land uses such as residential, commercial, industrial and institutional, or other uses at high to medium densities.

With the exception of areas designated as conservation, all of Manteo within current Town limits falls into this class.

2. Conservation Class

The Conservation Class of lands provides for effective long-term management of significant, limited, or irreplaceable resources. Examples of lands classed as conservation include major wetlands; essentially undeveloped shorelands that provide necessary habitat conditions (especially for remnant species); pocosins or publicly owned water supply watersheds and aquifers.

Within Manteo, all of the remaining coastal wetlands, the estuarine waters and the estuarine shorelines are designated as conservation areas. This designation does not mean "non-use" but it does mean that many uses should not be allowed and that appropriate uses should be managed carefully.

C. RELATIONSHIP OF POLICIES AND LAND CLASSIFICATION SCHEME

The policies adopted as part of this plan directly support the intent and purpose of the Land Classification System.

Lands classified for development are addressed in the policy section by virtually every issue and the cumulative purpose of all these policies is to make the Town of Manteo more viable and livable.

The conservation areas are also addressed frequently. Issues and policies in the plan address such things as use standards and allowable uses for AECs, removal of sewage discharges, stormwater pollution abatement, and compatibility with important cultural sites.

VI. BIBLIOGRAPHY

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TOWN OF MANTEO
LAND USE PLAN UPDATE

SECTION VII

APPENDICES

MARCH, 1987

VII APPENDICES

- A. Implementation Status of Manteo 1981 Land Use Plan
- B. Initial Public Information Sheet
- C. Memo on Results of Public Survey
- D. Draft Town Emergency Response Procedure

APPENDIX A
IMPLEMENTATION OF ADOPTED POLICIES

1981 Manteo Land Use Plan

The purpose of this analysis is to provide information to the Town of Manteo regarding the status of the plan adopted by the Town in 1981. In general, many of the major projects mentioned in the plan have been completed or are underway. As plans go, this is not a bad testament. The analysis is organized--as was the plan--by goal and policy.

GOAL 1: DEVELOP A NEW PURPOSE FOR THE DOWNTOWN

Objective 1: Develop Low Key Tourism Downtown

<u>Policy</u>	<u>Implementation Status</u>
A. Overall Tourist Strategy	◦ Apparently developed
B. Theme	◦ Developed
C. Interagency forum	◦ Not apparently successful
D. Publicity	◦ Some for special events - no evidence of use of theme
E. Information Sheets	◦ Not apparent
F. Signs to Downtown	◦ In place

Objective 2: Assist Existing Businesses by recruiting new businesses to downtown.

<u>Policy</u>	<u>Implementation Status</u>
A. Business Association	◦ Not yet established
B. New Businesses	◦ Some (slow going)
C. Downtown Inn	◦ Not yet - still discussed
D. Public facilities	◦ Many in place, more coming

GOAL 2: PRESERVE AND ENHANCE THE CHARACTER OF MANTEO THROUGH
COMPREHENSIVE PLANNING FOR THE TOWN'S FUTURE

Objective 1: Upgrade the Appearance of the Waterfront

<u>Policy</u>	<u>Implementation Status</u>
A. Boat Ramp	One in place
B. Waterfront Development	Underway - good progress
C. Boardwalk	Completed
D. Community facilities	Most never materialized
E. Marina	More docks coming

Objective 2: Protect Residential Neighborhoods

<u>Policy</u>	<u>Implementation Status</u>
A. Old Town neighborhood	Zoning in place but much commercial zoning in "Old Town"
B. Natural Hazards	Ongoing
C. Preservation Commission	Never happened
D. Street Access	Apparently complete
E. Zoning conflicts	Still occurring - rezoning never occurred.
F. Zoning Process	Ongoing

Objective 3: Minimize the Automobile's Impact in the Town

<u>Policy</u>	<u>Implementation Status</u>
A. Circulation Plan	Not done
B. Alternative Transport	Not done now
C. Separation of Tourist and Town Parking	No separation occurs
D. Development of Hwy 64	Some success

Objective 4: Encourage Citizen Participation in Town Planning

<u>Policy</u>	<u>Implementation Status</u>
A. Annual Review	° Not done now
B. Citizen Committees	° Not done now
C. Community Meetings	° Not done now
D. Planning Team	° Done
E. Teenagers	° Done
F. Elderly	° Done
G. Handicapped	° Done
H. Low income & minorities	° Not done now
I. Draft Review	° Done
J. Review of Goals	° Not done now
K. Education	° Not done now
L. Current Plans and Regul.	° Most available

Objective 5: Blend Local and Visitor Activity

<u>Policy</u>	<u>Implementation Status</u>
A. Annual Review	° Not done now
B. Double Function	° Not done now

Objective 6: Maintain the Friendly Small Town Atmosphere of Manteo

<u>Policy</u>	<u>Implementation Status</u>
A. Day Visitor Facilities	° None apparent
B. Types of Development	° Zoning allows all uses in commercial zones
C. Location of Development	° See zoning ordinance
D. Timing of Development	° Not relevant
E. Densities	° More or less
F. Agric. Open Space	° Not relevant

Objective 7: Preserve Natural Resources and Rural Areas in and around Manteo

<u>Policy</u>	<u>Implementation Status</u>
A. Estuarine Waters	◦ Apparently OK
B. Coastal Wetlands	◦ Apparently OK
C. Public Trust Areas	◦ Apparently OK
D. Estuarine Shorelines	◦ Apparently OK
E. Fragile Areas	
◦ Preserve unrestricted views	◦ Not successful
◦ Oppose land use changes	◦ Ongoing
◦ Acquire extraterretorial juris.	◦ Not successful

GOAL 3: IMPROVE COMMUNITY SERVICES TO RESIDENTS OF MANTEO

Objective 1: Improve and Maintain Quality of Streets and Sidewalks

<u>Policy</u>	<u>Implementation Status</u>
A. Inventory	◦ Apparently done
B. Priorities	◦ Some followed
C. Hwy 64 sidewalks	◦ Some constructed
D. Street trees	◦ Plan done

Objective 2: Provide for Low Income Housing

<u>Policy</u>	<u>Implementation Status</u>
A. C D B G	◦ None
B. Neighborhood Association	◦ Not apparent
C. Self Help Projects	◦ Not apparent

Objective 3: Initiate Community Dog Control Policies

<u>Policy</u>	<u>Implementation Status</u>
A. Public Information	° Not apparent
B. Bad Dog	° Not apparent

Objective 4: Develop vocational training opportunities

A. Vocational training	° Not apparent
B. Survey	° Not apparent

Objective 5: Make use of Existing Facilities and Local Groups to

Minimize Public Expenditures

No Policy Statements

Objective 6: Expand and Improve Health Care Facilities

<u>Policy</u>	<u>Implementation Status</u>
Provide Information	° Unknown

Objective 7: Improve the Quality of Law Officials

<u>Policy</u>	<u>Implementation Status</u>
Complain to Board	° Happens infrequently

Objective 8: Minimize the damage from hurricanes and floods

A. Flood Insurance Standards	° In force
B. Evacuation Plan	° Available

Objective 9: Develop Alternative Energy Sources

<u>Policy</u>	<u>Implementation Status</u>
A. Information	° Not apparent
B. 1985 Review	° Not done
C. No Nukes	° Not yet

GOAL 4: CELEBRATE THE QUADRICENTENNIAL OF THE FIRST ROANOKE COLONIES IN
MANTEO

Objective 1: Build and Dock the Elizabeth II in Manteo

<u>Policy</u>	<u>Implementation Status</u>
A. Construction	◦ Done
B. Location	◦ Ship in Place
C. Waterfront	◦ Done

Objective 2: Observe Key Historical Events Through Distinguished
Ceremonies

<u>Policy</u>	<u>Implementation Status</u>
A. Hold Events	◦ Ongoing
B. Location	◦ Some in Manteo
C. Coordination	◦ Assumed

Objective 3: Establish an Annual Anglo-American Folk Festival in
Manteo

<u>Policy</u>	<u>Implementation Status</u>
A. Cooperation	◦ Unknown
B. Acquire Iceplant Island	◦ Done

GOAL 5: DEVELOP A MORE ECONOMICALLY VIABLE COMMUNITY

Objective 1: Provide Opportunities for More Jobs Through Increased
Commercial Development

<u>Policy</u>	<u>Implementation Status</u>
A. Commercial Recruitment	◦ Not active
B. Governor's Award	◦ Nice while it lasted
C. Commercial Sites	◦ Available
D. Urban Services	◦ Available

Objective 2: Stabilize and Diversify Tax Base

<u>Policy</u>	<u>Implementation Status</u>
A. Sales Tax Allocation	◦ Unknown
B. Small Industries	◦ Slow going
C. Building Sites	◦ Available

GOAL 6: PROVIDE RECREATIONAL OPPORTUNITIES FOR ALL RESIDENTS

Objective 1: Provide a Teen Center

- Not established

Objective 2: Provide Parks and Recreation for Manteo Residents of all Ages

<u>Policy</u>	<u>Implementation Status</u>
A. Waterfront	◦ Done and ongoing
B. Lavada Church	◦ Park developed

Objective 3: Provide a Beach or Other Water Related Recreation Area

<u>Policy</u>	<u>Implementation Status</u>
A. Acquisition	◦ Done
B. Plans	◦ Ongoing

Town of Manteo



Four Hundredth Anniversary Celebration
1984 — 1987

TOWN OF MANTEO

LANDUSE PLAN UPDATE

The Manteo Town Board and the Planning and Zoning Commission are updating the Town's landuse and development plan. The update is being carried out with the assistance of Dean Moss and Associates, a planning consulting firm from Clayton, North Carolina.

The purpose of the update is to assess the progress made since the last plan was done (1980), and to plan for the Town's growth and improvement during the next 10 years.

Manteo is the county seat of one of the fastest growing counties in North Carolina. While the heaviest present growth is taking place in the beach communities, Roanoke Island serves as the focal point for the county and its natural beauty, water access and historic significance make it an area where growth pressures will ultimately be very heavy. A large development has recently been proposed for an area immediately adjacent to Manteo and the Town must fully address the implications of this and the other developments expected in the future.

While the Plan update is required by the North Carolina Coastal Area Management Act, the town is utilizing the opportunity to make a full analysis of its current situation and to address several specific issues of immediate or future concern, including: downtown area parking, dock improvements, development of a beach, sewage plant improvements and hurricane emergency planning.

The Town is committed to developing a plan which is publicly acceptable and implementable. To accomplish these goals the Town Board has directed Mr. Moss to work closely with all the citizens and groups in the community. Public participation will be solicited through surveys, meetings and personal interviews and conversations.

The planning will first concentrate on the collection of information and after February will shift to an emphasis on the presentation and discussion of alternatives. Final proposals will be made to the P & Z commission and the Town Board during the summer.

We encourage your participation if you have questions, or want to voice your concerns, contact Cay Hackney at 473-2133 or Dean Moss at 553-4282 (Clayton).

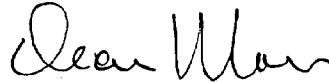
DEAN MOSS & ASSOCIATES

Natural Resources Planning, Project Management and Government Relations

MEMORANDUM

TO: Mayor and Board of Commissioners
Chairman and Planning Board Members
Town of Manteo

FROM: Dean Moss, Planning Consultant



SUBJECT: Results of Survey of Town of Manteo

DATE: March 17, 1986

1. I have completed an analysis of the survey forms returned to Town Hall and the attached materials describe the results on a question by question basis.

2. Forty-two questionnaires were returned to Town Hall as of February 27, 1986 and these have been analyzed. This represents an 8% return on the 533 questionnaires mailed out.

3. All of the respondents were white and were split about equally between male and female. The large majority of respondents were residents and homeowners. Most were employed fulltime although a number of retired people also responded. The respondents were divided in age with 17 reporting their age between 20 and 40, 14 between 41 and 60 and 12 older than 61. Only 8 of those responding reported having school age children.

4. Some respondents answered all of the questions, some answered only a few. Many of the respondents made comments and suggestions.

5. While the answers and comments described below represent only a small fraction of the Town's population, there are a wide range of opinions presented. There are some issues about which the respondents clearly feel generally the same way and there are some on which opinions differ.

6. The small response rate precludes the use of this questionnaire as a policy making tool. However, it does provide important insights into things which citizens of Manteo are concerned about. I recommend that the results of this questionnaire be publicized and that it be discussed by both the Board of Commissioners and the Planning Board during the process of identifying formal planning issues and setting planning objectives.

7. The attached materials describe the answers and comments given in response to each question on the questionnaire. In brief, the following can be concluded from the answers received. This may or may not represent a consensus of Town opinions.

a) There seems to be general agreement (80%) that the growth which has occurred in Manteo has been a good thing. The respondents feel that important benefits include more jobs, more shopping opportunities and an improved downtown. Some people are concerned however, particularly about traffic and a change in the small town feeling. The Town gets mixed reviews for its actions in dealing with the Town's growth.

b) The same proportion of respondents seems to favor future growth and in general they feel that the growth should occur downtown, on the highway, and on the vacant land in town. The majority of those responding felt that long range planning, restrictions on development, acquisition of land for parking and extensions of the water and sewer system were important things for the Town to do.

c) Most respondents (74%) would favor removing the Town's wastewater discharge from Shallowbag Bay and over 60% said that they would be willing to pay more for sewer service to make that happen. Eighty-eight percent (88%) felt that new discharges should be kept out of the Bay. Several respondents commented about the inconsistency between beach development and continued discharge.

d) As a single subject, parking raised the most comments. Many respondents apparently feel that downtown parking is currently inadequate and several recommended that improved parking lots be developed. The locations suggested were generally those parcels which serve as parking now but which have been committed by the Town to other uses. There was general opposition to parking meters on the streets but some support for limiting the time that someone could park. Sixty-nine percent (69%) of the respondents supported town acquisition of lands for parking and virtually everyone felt that developers should provide parking for new developments. Most people would not be willing to pay for parking but 40% indicated a willingness to pay if the parking was always available.

e) Most respondents thought that docking fees should be the basis for town dock maintenance.

f) A slim majority felt that underground utilities were a good thing but most would not be willing to pay more for them. The waterfront is the area of town where some respondents felt that underground utilities were most important.

g) Most respondents (86%) supported a uniform street numbering program and most said they wouldn't mind a change in their current address.

Results of Survey
Page 3
March 17, 1986

h) Seventy-six percent (76%) of those responding would support using town funds to develop a town beach on Ice Plant Island. Again the inconsistency of this proposal with continued wastewater discharge was noted by several people.

i) Most respondents feel that a Teen Center is still a need, although it was noted that careful supervision and structured activities would be required.

j) Over 50 comments were made concerning issues and ideas that the Town should consider, these are listed on the attached sheet.

MANTEO QUESTIONNAIRE

Compilation of Responses

1. Mailed out 533
 2. Received back 42 (8%)

3. Characteristics of Respondents

- All White - No Blacks Responded
- 20 Males - 20 Females - 2 couples
- 34 Indicated Residency
- 29 Indicated Home Ownership
- 8 Indicated Children in School
- 27 Indicated Fulltime Employment
- 11 Indicated Retirement
- 3 Indicated Homemaker
- 1 Indicated Other
- 17 Indicated Age 20 - 40
- 13 Indicated Age as 40 - 60
- 12 Indicated Age as 60+

4. Answers and Comments

1. The pace of life in Manteo and on Roanoke Island has picked up in the last five years. New building is occurring and new people are arriving.

a. Has this been a good thing from your perspective?

b. If yes, then what positive effects do you feel this has had?

More jobs?
 More shopping opportunities?
 More things to do?
 Improved downtown?
 Other?

Yes 34 No 9

26
 28
 18
 23
 6

c. If no, then what negative effects?

More traffic?
 More noise?
 More strangers?
 Less of a small town feeling?

d. Do you think the Town has done all it can to deal with the negative effects?

e. What else could it have done? See comments below

Yes 14 No 16

Comments:

Growth has beautified Town and improved tax base.
 Development could have been done more quickly.
 Town should have planned for more parking.

Comments: (continued)

Let services catch up with growth.
 Improved parking needed.
 Liquor by the drink important.
 Need cooperation on Board.
 Growth a mixed blessing.
 Traffic light at Shopping Center.
 Downtown highrise a mistake.
 More marinas needed.
 Historic district needed.
 Maintain streets, parks and trees.
 Hire enough personnel.
 Current quality of life declining.
 Move Post Office to Highway.
 More litter from growth.
 Improve standards of Town operations.
 Hospital needed.
 Need professional staff.
 Start welcoming outsiders.
 Liquor by the drink.
 More downtown parking.
 More places to live.

2. Some people project that growth and development in the Manteo area will continue to occur and perhaps will increase.

	Yes	33	No	8
a. Do you think that more growth in and around Manteo is a good idea?				
b. Do you favor:				
1. More commercial development on US 64?				24
2. More commercial development downtown?				32
3. More and denser residential development on undeveloped land in Town?				26
4. More and denser development on undeveloped land along the sound?				16
5. Mobile home developments?				12
6. Marinas?				20
7. More tourist oriented attractions?				18
8. More apartments and condominiums?				19

c. What things should the Town be doing to prepare for the growth which may come?

Actions	35	Important	6	Not So	Should	Not Do
Long range planning	29	Important	12	Not So	1	Do
Restrictions on development	14	Important	23	Not So	5	Do
Acquire land for parks	28	Important	11	Not So	2	Do
Enlarge sewer & water system	18	Important	18	Not So	3	Do
Reactivate Town water supply	13	Important	20	Not So	6	Do
Annex adjacent land	9	Important	22	Not So	11	Do
Raise fees for services	4	Important	18	Not So	20	Do
Raise taxes	17	Important	18	Not So	7	Do
Fees for new water & sewer hookups						

Other Actions? See comments below

Comments:

New commercial development should raise tax base.
 County should go to Alligator River for water.
 Street signs needed in newly annexed areas.
 Liquor by the drink needed.
 Growth should slow but not stop.
 Need Town planner.
 Maintain cemetery
 Increase tax base not taxes.
 Keep adequate parking downtown.
 Make growth pay own way.
 Annexation important.
 Less dense residential development.
 Oppose corridor commission restrictions.
 Annex Mother Vineyard + Pirates Cove.
 Public transportation needed.

3. The Town currently discharges treated sewage to Shallowbag Bay. The new sewer plant will start operating this winter and will remove about half of what is currently discharged. Some have suggested that all the treated sewage should be taken from the bay.

- | | | | | |
|---|-----|----|-----------------------|----|
| a. Do you think this is a good idea? | Yes | 31 | Doesn't Really matter | 6 |
| b. Would you be willing to pay more for sewer service to make this happen? | Yes | 27 | No | 10 |
| c. Do you think that other discharges from new developments should be allowed into the bay? | Yes | 4 | No | 37 |

Comments:

New discharges ok if controlled.
 Sewage and beach will not coexist.

4. The lack of adequate parking in the downtown area has long been seen as a problem. What do you think of the following ideas for addressing that problem?

- | | | | | |
|---|--------------------|----|----------|----|
| a. Place parking meters on the streets? | Good idea | 6 | Bad idea | 32 |
| b. Limit parking to a short period? | Good idea | 23 | Bad idea | 14 |
| c. Town purchase or condemn property and make a parking lot. | Good idea | 29 | Bad idea | 9 |
| d. Make developers guarantee enough parking for housing or commercial development | Good idea | 40 | Bad idea | 1 |
| e. Do you have other ideas? | See comments below | | | |

f. Would you be willing to pay for parking if it were always available and close to downtown?

Yes	17	No	24
-----	----	----	----

Comments:

Mark parking lot across from Post Office.
 Parking lot near Old Ben Franklin.
 Repair and mark lot across from Post Office.
 Limited parking time only in small area around shops.
 Keep current parking lots.
 Pave lot across from Post Office for free parking - meters on street.
 Longer term parking needed for employees in Town.
 Ice Plant Island parking for downtown employees.
 Toll booths at town entrance \$100.00 toll.
 Use meters in lots.
 Relocate some facilities to ease congestion.
 County and employers should provide downtown parking for employees.
 Parking not such a bad problem.
 Parking should be a cooperative effort between Town, County, and businesses.
 Stacked parking a good idea.
 Acquire land for parking.
 Remove Town Hall parking limits.
 Need parking garage.
 Annual sticker for residents.

5. The Town docks and boat ramp on Dough's Creek need repair and regular maintenance. How should this be paid for?

a. Out of tax revenues?	Yes <u>13</u>	No <u>23</u>
b. Out of docking fees?	Yes <u>37</u>	No <u>3</u>
c. Should non-town residents have to pay a special fee to launch a boat?	Yes <u>25</u>	No <u>17</u>

Comments:

No short term docking fee.
 Use tax revenues only if necessary.
 Make Hollowell pay.

6. Underground utilities would remove electrical, telephone and TV cable wires from poles over the streets. This is currently required for new development.

a. Do you think this would be a good thing to do in other parts of town.	Yes <u>22</u>	No <u>18</u>
b. Would you be willing to pay a higher utility bill for a while to make this happen?	Yes <u>16</u>	No <u>25</u>
d. Should only certain areas of the Town be done?	Yes <u>9</u>	what areas? See comments below <u>26</u>

Comments:

New construction only.
 New developments.
 Burnside Rd. to N. C. Power offices.
 Downtown Waterfront.
 Whole Town.
 New areas.
 Underground Utilities - where no concrete or paving.
 E. of 64 should be underground.

7. Do you think a uniform street numbering system would be a good thing to have? Yes 36 No 5

8. Would you mind if it changed your current street address? Yes 8 No 31

9. A Town Beach has been suggested as a good idea. An area near the visitor center across Dough's Creek has been set aside for that purpose. Would you support using local funds to develop a Town Beach in that location? Yes 32 No 9

Comments: Beaches won't mix with sewage effluent discharge.

10. In the 1980 Survey, a teen center was cited as a real need for the community.

a. Does that need still exist?

Yes 26 No 14

Comments: If patrolled + adults responsible.
Use schools and churches.
Town can't afford.

11. Finally some questions about you. Are you:

a. Male 24

Female 20

b. Black 0

White 42

c. Resident of the Town

34

d. A homeowner

29

e. Employed full time
Unemployed in winter
Retired
Homemaker
Other

27

11

3

1

f. Do you have school age children in your family

8

g. What age category do you represent?

20-40 17 41 - 60 14 61 or over 12

12. What other projects would you like to see this plan address?

See attached list of comments.

MANTEO QUESTIONNAIRE

FINAL COMMENTS

1. Need good town map for police.
2. Need file card for police with businesses name.
3. Need hospital in area.
4. Post Office should be moved to highway.
5. Board of Educ. Bldg. should be moved.
6. Lot across from Post Office should be Park.
7. Teen Center in old Fooderama Bldg.
8. Wants Barlow ditch cleared - wants uncontained trash picked up.
9. Need new business downtown (drug/groc stores).
10. Recreation sites on Bay should be developed.
11. Upscale mobile parks for retirees needed.
12. Do better job of regulating new development.
13. Use common sense.
14. Incorporate all of Dare County as one municipality.
15. Paid firemen are needed.
16. Need public park for all town and island children.
17. Motel plus groc. tax (1%).
18. Need special areas and activities for seniors.
19. Bike paths needed.
20. Need planning to preserve small town character.
21. Supports Teen Center if no dope dealing.
22. More need for inexpensive but nice housing.
23. Historic District Zoning.
24. Cemetery maintenance.
25. Public Beach.
26. Waterfront development incentives.
27. Full service marina plus docks.
28. Advertising plus promotion of docking services.
29. More town sponsored events.
30. Sidewalks extended.
31. Publish survey results.
32. Need good development.
33. Hire parks superintendent.
34. Improve streets and sidewalks.
35. Street cleaning.
36. New street lights in annexed areas.
37. Limit 64 development - keep trees.
38. Water conservation - water source heat pumps use shallow GW.
39. Town bldgs. should be near highway.
40. Merchants Association a good idea.
41. Tap retired talent.
42. Need some drawing card downtown.
43. Rework zoning ordinance.
44. Opposes Town spending for docks.
45. Change water bills to 30 days payment.
46. Enforce sewage hookup requirement.
47. Town should sponsor events to raise charity money.
48. Need structured activities for youth.

Final Comments (continued)

49. Need downtown attractions.
50. Need liquor by the drink.
51. Improve Town docks.
52. Entertainment downtown.
53. Library on Iceplant Island.
54. More Elizabeth II interaction.
55. Landscaping plus upkeep of waterfront.
56. Enforce zoning.
57. Encourage cruises and boat tours to Manteo.

APPENDIX D

TOWN OF MANTEO

EMERGENCY OPERATIONS PROCEDURE

DRAFT

July 1, 1986

Town of Manteo

Emergency Operations Procedure

NOTE:

This draft procedures document is a redraft of the document prepared for you by Cay Hackney in December 1985. It is generally consistent with the policies in the plan. Absolute consistency can be achieved later.

In light of the approach of hurricane season, I recommend that this be scheduled for debate and adoption quickly.

TOWN OF MANTEO, N. C.
EMERGENCY OPERATIONS PROCEDURE
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TOWN OF MANTEO, N. C.
EMERGENCY OPERATION PROCEDURES

I. PURPOSE

The purpose of this document is to establish policies and guidelines to be followed by Town of Manteo officials during emergency situations, thereby preventing or lessening the effect of disasters on the people and property in the Town. The adoption of these procedures also lessens the confusion on the roles and responsibilities of employees, the Board of Commissioners, and other involved agencies.

II. SCOPE AND COMPOSITION

These emergency operation procedures are designed for use in all natural and man-made disasters. These procedures are intended to compliment the Dare County Disaster Relief and Assistance Plan which takes precedence over these procedures. Should any of these procedures conflict with any part of the Dare County Plan, Manteo's procedures will be abandoned and the county plan adhered to.

These emergency operation procedures are designed to be a basic plan which provides general guidance and resources in coping with particular threats which exist in the Town.

III. AUTHORITIES

GS-166-2 Responsibilities for Civil Preparedness

Dare County State of Emergency Ordinance

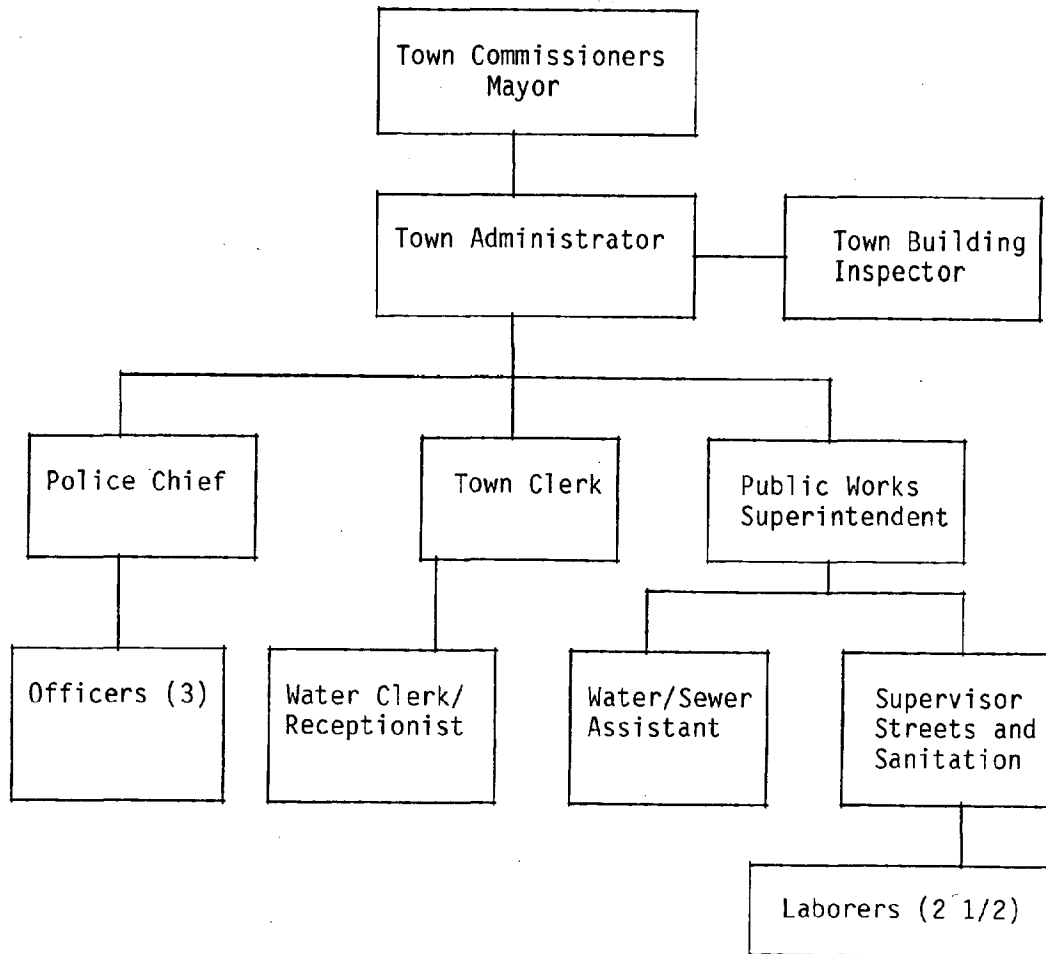
Town of Manteo Code of Law

Town of Manteo Personnel Manual

IV. REFERENCE

Dare County Disaster Relief and Assistance Plan

TOWN OF MANTEO
ORGANIZATIONAL CHART



VI. GENERAL LISTING OF RESPONSIBILITIES - EMERGENCY TEAM

A. Mayor - Emergency Operations Director

1. Serves as liaison between the Board and Emergency Coordinator
2. Is available by radio or telephone throughout all phases
3. Directs the Town's response through coordinator
4. Coordinates procedures and county disaster actions

B. Town Administrator - Emergency Coordinator

1. Serves as advisor to the Board
2. Available by radio, telephone or physically located at operations center through all phases
3. Directs employees during all phases and oversees actions
4. Directs the operations center
5. Furnishes regular reports to mayor and board
6. Acts as public information officer as directed by board
7. Makes decisions as to location of town resources
8. Creates and maintains resource manual of supplies and equipment available for emergency purposes

C. Police Chief - Law Enforcement Officer, Transportation and Supply

1. Carries out routine law enforcement duties
2. Available throughout all phases by radio or telephone
3. Maintains list of 4-wheel drive vehicles, boats, radio operators
4. Responsible for board approved checklist

D. Town Clerk - Public Records Officer

1. Responsible for acquiring, maintaining and submitting records of damage
2. On duty at operations center immediately following emergency
3. Responsibility for preserving necessary town records
4. Responsible for board approved checklist

E. Public Works Superintendent - Emergency Water and Sewer Officer

1. Primarily responsible for continuation and repair of water and sewer services to the Town
2. Available by radio, telephone or at Operations Center through all phases
3. Ensures water supply for fire fighting purposes
4. Maintains equipment to emergency readiness
5. Responsible for training assistant to act in his absence
6. Responsible for assuring water in ground tank is safe and assessible to fire fighters
7. Responsible for creating and maintaining board approved checklist.
8. Responsible for creating and maintaining board approved checklist.

F. Streets and Sanitation Supervisor - Public Property Officer

1. Responsible for all town property and parks during pre and post emergency phases
2. Available by radio, telephone through all phases of emergency
3. Responsible for board approved checklist

G. Building Inspector

1. Responsible for damage assessment in post-emergency phase.
2. Available by radio or telephone immediately following emergency.
3. Works with public works superintendent and streets supervisor to assess damages to Town property.
4. Inspects damages to private property and has authority to restrict re-entry to damaged structures.
5. Prepares reports for coordinator and records officer.

VII. GENERAL CONCEPT OF EMERGENCY OPERATIONS

A. General Preparedness

1. Prevention of disasters
2. Planning for emergency response
3. Public Education

B. Phase One Pre-emergency

1. Warning of officials, employees, citizens
2. Evacuation as needed
3. Preparations for pending emergency

C. Phase Two During Emergency

1. Maintenance of public safety and order
2. Response to specific situations
3. Continuity of planned services

D. Phase Three Post-emergency

1. Maintenance of public safety and order
2. Damage assessment
3. Cleanup and restoration of services
4. Evaluation and reporting
5. Revisions to town codes and procedures as needed

VIII. GENERAL EMERGENCY PROCEDURES

Following are general procedures for consideration during an emergency. Specific checklists are the responsibility of each member of the Emergency Operations Team. (See Appendix)

A. Phase One - Pre-emergency Phase

Stage 1 - 72 hours

1. Check emergency checklists for completion
2. Assess status of all employees
3. Assess readiness of all equipment and supplies

Stage 2 - 24 hours

4. Notify all employees of duty status
5. Update telephone numbers
6. Consider notice of housing availability
7. Consider notice of housing availability
8. Consider notice of transportation assistance

Stage 3 - 12 hours

9. Gas all town vehicles, organize gear, equipment
10. Move any town property out of threat area
11. Secure benches, trash cans, loose objects

Stage 4 - 8 hours

12. Secure town buildings (tape windows, etc.)
13. Prepare for damage assessment
14. Activate emergency control center at Town Hall

- B. Phase Two - Emergency Phase (landfall of threat)
 - 1. Monitor water availability - fire fighting concerns
 - 2. Monitor sewage function, effect of loss of power
 - 3. Implement agreed upon control measures
- C. Phase Three - Post-Emergency Phase

Stage 1 - 12 hours

- 1. Check on re-establishment of power, water, sewer
- 2. Implement damage assessment plan
- 3. Check storm drains, clean
- 4. Clean large limbs, refuse from streets
- 5. Consider notice of transportation assistance
- 6. Meet deadlines for reports to county

Stage 2 - 24 hours

- 7. Clean-up continues, brush removal
- 8. Return trash cans, dumpsters, etc.

Stage 3 - 48 hours

- 9. Reports from operations team due to coordinator

Stage 4 - 72 hours

- 10. Evaluation of emergency response
- 11. Re-supply of emergency material

TOWN OF MANTEO, N. C.

DAMAGE ASSESSMENT TEAM

Town Administrator - Team Leader

Town Clerk - Records

Commission Member

Planning Board Member

Building Inspector

Local citizens as needed

Contractor or Civil Engineer

Realtor

Fire Chief

TORNADO SAFETY RULES

When a tornado threatens, your immediate action can save your life!

STAY AWAY FROM WINDOWS, DOORS, AND OUTSIDE WALLS -- PROTECT YOUR HEAD.

- ☐ In homes and small buildings, go to the basement, or to an interior part on the lowest level -- closets, bathrooms, or interior halls. Get under something sturdy.
- ☐ In schools, nursing homes, hospitals, factories, and shopping centers, go to pre-designated shelter areas. Interior hallways on the lowest floor are usually best.
- ☐ In high-rise buildings, go to interior small rooms or hallways.
- ☐ In mobile homes or vehicles, leave them and go to a substantial structure. If there is no shelter nearby, lie flat in the nearest ditch, ravine, or culvert with your hands shielding your head.

TORNADO WATCH: Tornadoes and severe thunderstorms are possible.

TORNADO WARNING: Tornado detected; take shelter immediately.

TORNADOES often accompany SEVERE THUNDERSTORMS and are only one of many thunderstorm hazards. Others include:

LIGHTNING -- Kills and injures hundreds and starts fires.

WINDS -- Very strong, gusty winds can cause great damage.

RAIN -- Heavy downpours may result in flash floods.

HAIL -- Not a killer but can be very damaging.

LISTEN TO RADIO, TELEVISION, OR NOAA WEATHER RADIO for latest National Weather Service bulletins.

VII. INCREASED READINESS ACTION CHECKLIST

(See Attachment 4 - Checklist, and Attachment 7 - Conditions/Action Flow Chart.)

A. The following increased readiness conditions are established:

Condition 5	Hurricane Season (June 1 - November 30)
Condition 4	Alert - Hurricane Advisory
Condition 3	Hurricane Watch or approximately 48 hours to forecasted landfall
Condition 2	Hurricane Warning or approximately 24 hours to forecasted landfall
Condition 1	Twelve hours or less to forecasted landfall
Condition 0	Landfall
Reentry	Threat removed or damage assessment allows

B. The Control Group Chairman will declare the condition. The Area Coordinators and the Support Group will implement actions for each condition when announced.

NOTE: In the eventuality of a pre-season hurricane, it may be necessary to first institute a condition of readiness other than Condition 5. Under peculiar circumstances it may be necessary to skip a condition and go directly into a more advanced condition. This means that all of the actions required in the preceding conditions, and those required in the declared condition, must be completed in the available time. The increased readiness conditions as stated above will remain standard, but the timing of the required actions may vary within certain sections of the county depending on time elements involved in completing the activity. For example, evacuation movement will commence earlier for areas such as Ocracoke (Hyde County) and Hatteras Island where great distances must be traveled, restricted travel ways will be overburdened, extremely low-lying roads exist, or other complicating factors increase movement time to insure the safety of the evacuees.

VIII. EVACUATION AREAS, ROUTES, AND SHELTER LOCATIONS

(See Attachment 5.)

A. General

1. Evacuation routes and designated shelters are as indicated on Attachment 5.
2. Other residents wishing to seek shelter (mobile home residents or persons living in any structure which does not provide adequate protection) should leave the area or go to the nearest designated shelter as directed.

3/30/84

DARE COUNTY
DISASTER RELIEF AND ASSISTANCE PLAN
APPENDIX 2 -- WINTER STORM SAFETY RULES

RULES FOR RIDING OUT
WINTER STORMS

WINTER STORM SAFETY RULES

Independent. Check battery-powered equipment, heating fuel, food stock and other supplies.

Layers for the season. Layers of protective clothing are more effective and efficient than single layers of thick clothing. Mittens are warmer than gloves. Hoods should cover mouth, to protect lungs from extremely cold air.

Don't kill yourself shoveling snow. It is extremely hard work and can bring on a heart attack, a major cause of death during and after winter storms.

Drive winter driving seriously. Keep your car "winterized". Carry a winter car kit containing equipment to help you keep warm, fed, and alive if you are trapped in a winter storm.

If a blizzard traps you, avoid overexertion. Stay in your vehicle (but don't ventilate), exercise, turn on dome light at night, stand watches, don't panic.

KNOW THE WINTER WORDS OF WARNING

Ice storm, freezing rain, freezing drizzle mean a coating of ice is expected; heavy means the weight of the ice will cause extra damage.

Snow means a steady fall unless occasional or intermittent is used.

Heavy snow means a fall of four to six or more inches is expected in the next 12 hours, or six or more inches in the next 24 hours. But heavy snow can mean two or three inches where winter storms are infrequent.

Snow flurries mean intermittent snowfall that may reduce visibility.

Snow squalls are brief, intense falls of snow, with gusty surface winds.

Blowing and drifting snow means strong winds and greatly reduced visibility.

Blizzard means windspeeds of at least 35 miles per hour, considerable falling and/or blowing snow, and temperatures of 20 degrees Fahrenheit or less, over an extended period.

Severe blizzard means windspeeds of at least 45 miles per hour, dense snow, and temperatures of 10 degrees or less.

Cold wave means a rapid fall in temperatures within a 24-hour period that will require emergency protective action.

WATCH -- a winter storm is approaching.

WARNING -- a winter storm is imminent.

INSTRUCTIONS FOR EVACUEES

When your local government advises evacuation, keep calm, and follow these procedures promptly:

1. Shut off main gas valve and pull main power switch before leaving home.
2. Head for the designated shelters or evacuation points indicated for your area, as directed on your Evacuation Plan maps and by broadcasts during the emergency. Follow routes indicated on maps. Drive up to shelter entrance, unload, and park car as police instruct.
3. Take only clothing, food, and special medicine that is necessary; do not try to bring household equipment.
4. Follow instructions of Red Cross shelter personnel, and volunteer to help with any tasks needed for efficient shelter operation.
5. Remain at the shelter until informed that you may leave. People will not be allowed back into evacuated areas until Public Health officials and building inspectors have completed their inspections and given their approval.

TELEPHONE NUMBERS

MAYOR AND TOWN COMMISSIONERS

EMERGENCY OPERATIONS TEAM

TOWN EMPLOYEES

INVOLVED CITIZENS

Property Address	Name of Owner	Check (✓) Type of Building				Check (✓) Extent of Damage				For Use By Damage Assessment Officer		
		Residence ¹	Mobile Home	Business	Other ²	Destroyed or Essentially Destroyed, Small Percentage of Structure Remains Intact, or Flood Water Line 8 Feet Above Floor. (x 1.00)	Extensive Exterior and Interior Damage, Portions of Roof or Walls Destroyed, or Flood Water Line 6 Feet Above Floor. (x 0.70)	Damage to Exterior and Interior of Such Magnitude to Render Building Unusable, or Flood Water Line 3 Feet Above Floor. (x 0.30)	Usable/Habitable	Value of Building (Exclusive of Land, Contents)	Estimated Dollar Loss	% Insurance Coverage
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19. 1.												
20.												

Notes		Damage Assessment Worksheet (Percentage of Value Method)	
1. Check if single family, enter number of families if multi-family, duplex, or apartments		Incident	Date of Insp.
2. Check and describe on reverse side of form.		Assessor	Shi. No. 101
3. Use reverse for notes, sketch maps, etc.			

3/30/84

DAMAGE ASSESSMENT WORKSHEET INSTRUCTIONS
(Percentage of Value Method)

This form is used by local/county government damage assessment teams following a disaster to assess losses to private property. Assessment is based upon on-site inspections and classification of damages according to "Extent of Damage" columns on the form. Estimated dollar losses are calculated by the Damage Assessment Officer.

INSTRUCTIONS:

Damage Assessment Team -

- a. Complete bottom of form indicating type of incident (flood, tornado, ice storm, etc.), area or zone of assignment covered by this worksheet, date of inspections, name of assessor, and sheet number (serially by assessor, area/zone, or incident, depending upon local preference).
- b. List damage property assessed by indicating address, name of owner (or business name, building name, etc.), and type of building. In case of multi-family housing, use figure to indicate number of families. For property not covered by types listed, check "Other" and describe under "Remarks" below.
- c. Indicate usability and extent of damage by checking the most appropriate column.
- d. Upon completion of the inspections, submit worksheets to the Damage Assessment Officer.

Damage Assessment Officer -

- a. Review worksheets for completeness and legibility while assessor is present. Have any incomplete information added and any illegible entries clarified before releasing assessor.
- b. Enter property values from available listings, being sure to exclude value of land and building contents.
- c. Determine estimated dollar loss by multiplying value of building by percentage multiplier indicated in Damage column checked.
- d. Using best available information, enter % of property value covered by insurance.
- e. Consolidate damage figures and transmit to the State Emergency Operating Center (EOC) using Damage Assessment Report format used by the local Emergency Management Coordinator.

R E M A R K S:

